FEB 1 2 1932

THE QUARTERLY JOURNAL OF ECONOMICS

VOL. XLVI *FEBRUARY, 1932* No. 2

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CAMBRIDGE, MASS., U.S.A.
HARVARD UNIVERSITY PRESS

LONDON: HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

1932

The Quarterly Journal of Economic

Published by Harvard University

Books, periodicals, and manuscript to be addressed, EDITORS of QUARTER JOURNAL OF ECONOMICS, Cambridge, Mass.

Business letters to be addressed, HARVARD UNIVERSITY PRESS, Ran Hall, Cambridge, Mass. Subscription, $5.00 a year.

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THE
QUARTERLY JOURNAL
OF
ECONOMICS

FEBRUARY, 1932

EXPORT, IMPORT, AND DOMESTIC PRICES IN THE UNITED STATES, 1926–1930[1]

SUMMARY

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This paper undertakes some preliminary groundwork in the field of international and domestic prices. At present in the United States no monthly indexes of import, export, or mainly domestic prices are being currently published,[2] tho some have been computed for special periods.[3] An ex-

1. I am indebted to the Harvard University Committee on Economic Research for grants of money which made this study possible, and to the Committee staff for the carrying out of the greater part of the statistical and research work involved.

2. It seems hardly necessary to point out that the various general indexes of wholesale prices, e. g., that put out by the United States Bureau of Labor statistics, by intent do not separate international from domestic commodities.

3. Two of these special studies proved to be particularly useful in the selection of commodities, price series, sources, and formulae. The first, that of the Federal Reserve Board, *Prices in the United States and Abroad, 1919 to 1923* (Washington, 1924), 63 pp., gives indexes of export, import, and domestic prices for the United States, England, France, Canada, and Japan. These were continued for a time in the monthly Federal Reserve Bulletins, but dropped without explanation in March 1926. The second, that of the Harvard Economic Society,

tended comparison of domestic and international commodities, and their price movements, is therefore not now possible. The desirability of such a comparison, and of assessing the effects of international trade on domestic trade during the present depression, suggested a study for the quinquennium 1926 to 1930.

A scrutiny of the recent movements of individual prices reveals almost at first glance that international commodities have played a large rôle in the price debacle of 1930. The quotations of such articles as wheat, cotton, rubber, silk, wool, jute, cocoa, tin, zinc, hides, sugar, oil and gasoline have not only led the way downward but in many cases have reached levels unequalled since the middle of the 1890's.

The fact seems simple, but the problems raised are intricate. They appear in a number of fields of economic investigation. The monetary theorist, for example, finds the recent avalanche of international prices a major variable in disrupting techniques of domestic price- and credit-control. The business cycle theorist similarly identifies international commodities as the primary instruments through which economic storm areas are diffused and propelled horizontally and vertically from one price structure to another. But it is for the specialist in the theory of international trade that the distinction between the movements of international and domestic prices is of crucial importance, — whether he seek to follow the sensitive adjustment of international debits to credits, or measure the effects of tariffs, or trace out the repercussions of changes in the rate of flow of long- and short-term capital.

I

The task of unravelling the two sets of prices is beset with many difficulties, theoretical and statistical. Reserving the

Weekly Letter No. 7, February 19, 1927, computed import and export sub-group indexes from the U. S. B. L. S. general price index. The revision of the latter, however, in September, 1927, not only added 150 items, but shifted the base of the weights to average marketings in 1923–25, and that of prices to 1926, thus making the old segregation obsolete and inadequate. No subsequent indexes of exports and imports were ever published.

discussion of the latter for a separate section, let us begin with a brief consideration of those which are theoretical in character.

To compute any export or import price index obviously demands that one distinguish international from domestic commodities. But how? What shall be the criterion? Tho in economic theory it may be easy to conceive of sheltered and unsheltered industries, and of domestic and international prices, in an actual attempt to apply this distinction it is difficult to use a basis of selection that does not seem arbitrary. No simple criterion of domestic or international prices seems to exist.

The reason is, of course, not far to seek. The first and fundamental axiom of price theory is that the prices of all goods constitute a system in a perpetual state of changing equilibrium, the price of one item being affected both indirectly and directly by changes in the prices of a host of other items. Between any one price, say house rent, and any other price, say the price of sugar, there are at least two general connections.

First, both compete for the consumer's dollar, and both give employment to the factors of production. By alterations in consumer budgeting, by reapportionment in the flow of social resources among the various channels of employment, as well as by opportunity or alternative rewards to the cost factors — the prices of all items are indirectly interdependent.

Second, there are a number of direct connections between items, which have multiplied very rapidly in recent years. Technological revolutions in industry, and startling advances in speed and ease of transportation and communication; the expansion and acceleration of international movements in foreign exchange, money, bank credit, and investment funds; internationalization of consumer taste — all have enormously extended both laterally and vertically the area of competitive forces affecting a given price. Scientific developments in general, and particularly the sweep of chemical engineering processes through manufacturing technique, have multi-

plied the sources whence an item can be supplied, increased the number of its uses, and brought into competition with it a host of substitutes, often joint- or by-products from industries otherwise far removed. Inter-commodity, inter-process and inter-industry competition — that is, conditions of joint international demand, rival international demand, joint international supply, and rival international supply — are coming to prevail over almost the whole range of economic enterprise.

The importance of this fact for the problem in hand is obvious. If all prices are in equilibrium, can there be any substantially independent nuclei? Are there in the economic cosmos such things as solar systems or galactic universes? Does a domestic commodity, or domestic price, or domestic market exist?

Now it must be admitted that only very few can be pointed out with undebatable certainty and precision. But it is well to keep in mind the familiar fact that economic distinctions stand or fall primarily by the convenience and aid they afford in handling refractory masses of data, rather than by their logical nicety. Even more than in other problems one must here be alert to classify an economic fact according to that which is true in the main rather than that which is partially valid. Are there, then, any characteristics which reasonably indicate a presumptive probability that an item belongs to the genus domestic rather than international?

Three such are generally mentioned in the literature of the subject,[4] the first identifying a domestic *commodity*, the second a domestic *price*, and the third a domestic *market*.

The easiest and most important, tho only preliminary, test is that of the physical movement of the commodity. Most likely to be domestic are those items which do not move across national boundaries at all. They are usually very bulky (sand, gravel); or perishable (berries, flowers); or local

4. See, e.g., F. W. Taussig, *International Trade* (New York, 1927), p. 34 and ch. 5 *passim;* Jacob Viner, *Canada's Balance of International Indebtedness, 1900–1913* (Cambridge, 1924), pp. 210, 228, 238, 247; and J. W. Angell, *The Theory of International Prices* (Cambridge, 1926), pp. 376, 377–78.

in their demand (foodstuffs, wearing apparel and other articles whose consumption is peculiar to, and distinctive of, racial and other groups); or immovable (land and buildings); or incapable of being far detached from the source of supply (gas, services). By far the most important of them is labor, professional, skilled, and unskilled. Tho international migration has increased considerably since the days of Adam Smith, labor still remains, by virtue of social friction if not of political mandate, "of all baggage the most difficult to transport."

It is but infrequently that the case is clear cut. Between labor at one extreme and that most international of commodities, gold, on the other, all the items of commerce can be arranged in an array so continuous as to make any dividing line seem arbitrary. Nevertheless, even tho a commodity does move across the national border line, it may be substantially domestic in at least four cases.

First of all, it may be said to be so when the movement is relatively small in volume. Just what the proportion of exports or imports to domestic supply must be before it can be said to be significant, i.e., marginal and of major importance in price determination, can not be determined, of course, by rule of thumb. It is obviously not the same for all commodities nor the same at all times. In fact, movement or non-movement *per se* obviously means nothing. For, if this criterion be applied without qualification, not only will the number of domestic commodities be insignificant, inasmuch as there are but few items that do not move at all, but the number of exports and imports will also be negligible, since there are but few which move only one way. In the foreign trade of the United States, for example, even if one leaves out of account reëxports or imports in bond, one finds that nearly all of the leading exports, such as cotton and copper, are imported in substantial amounts, and that similarly many of the leading imports such as sugar are also exported. Yet no one would, on that account, deny the existence of typical export commodities and typical import commodities. A sim-

ilar measure of arbitrariness is required to differentiate typical domestic commodities.

The other cases in which a commodity may be substantially domestic, despite a certain amount of movement (continuing the enumeration), are, second, when the export or import figures show it to be discontinuous and sporadic, due to an unusual shortage of supply because of unprecedented drought, or strikes, or to exchange dumping; third, when, as in the instance of bituminous coal, or eggs in the shell, the international movement of the item is clearly a border trade, as between Cleveland and Windsor, or San Diego and Tia Juana; and, fourth, when a special, isolated, non-competitive section of the market is catered to, like Danish butter at a class price to a group whose demand is almost inelastic, or American notions and wearing apparel to American tourists and residents abroad. Such movements may have substantially no influence on the item domestically produced for the large competitive domestic market.

Leaving now the discussion of physical movement as a criterion, let us see whether the statistics of price behavior give more secure indications. Three questions must be answered. First, what kind of a price is a domestic price? Second, how does it tend to behave? Third, how does its behavior compare with that of the same item in other countries?

The first question permits of a very ready answer. The reader has no doubt long since noted that but few of the commodities enumerated above as domestic are sold wholesale. The more widely the price of an item is quoted in trade periodicals and newspapers; the more complicated the organized exchange, and the more standardized the grades in which it is bought and sold; in short, the more typically wholesale a price is, the more likely it is to be influenced by international forces of demand and supply, and the less likely that it will be domestic. Domestic prices are thus typically retail prices and the prices of services, a fact which by implication has been recognized in the literature of the subject since the days

of Cairnes.[5] In this regard the conclusion of Professor Viner runs as follows: "The trend of wages, if allowance be made for the probability that wages will show considerable inflexibility during periods of fluctuation in general price levels, offers perhaps the best single index of the trend of domestic prices in general."[6] Yet for reasons that will appear later, an index of domestic prices can hardly be constructed from other than wholesale prices.

The second question, How does a domestic price behave? can be answered by a glance at Chart I (turn also to Chart IX). The diversity of behavior confirms *a priori* expectation.

On the one hand, especially when the demand or supply of an item is subject to the vagaries of local variations in climate, the more clearly domestic the price, the greater and the more diverse its seasonal and irregular fluctuations. Adjustment takes place wholly through price. Local deficiencies or excesses are not mitigated by foreign trade. Thus the price relative of potatoes could be 152 in April, 1926 and only 23 in April, 1929.

One must add, however, that the difference between international and domestic prices in this respect is one of degree, and not of kind. All prices are in a sense local prices. Every commodity has, theoretically, an import point and an export point. But just as the green band in the spectrum is somewhere between blue and yellow, so, at any given time in a particular market, there is a range of values for which a local price may be said to be domestic, below which it is an export price, and above which it is an import price. The greater the cost of movement (including tariffs, etc.), the farther apart the limits of this range (expressed in relatives). If, for any period of time, the price traverses the range so easily as to reach the export or import limit frequently, traders are on the lookout to make international bids and offers, and send or receive international shipments. But, precisely

5. J. E. Cairnes, *Some Leading Principles of Political Economy* (New York, 1874), p. 409. The point has been reëmphasized by L. B. Zapoleon, "International and Domestic Commodities and the Theory of Prices," *Quarterly Journal of Economics*, May, 1931, xlv, 444 *et al.*

6. J. Viner, *op. cit.*, p. 247.

as in the foreign exchange market, the movement of the commodity, whatever its volume, whether real or threatened, establishes only the limits of price fluctuation. International trade activity does not explain price movements *within* the range. If the commodity be regularly exported the price hovers near the export point[7]; if it be regularly imported, the price will fluctuate about the import point. If the price of the same commodity be near the import point in one country and hover around the export point in another, the two quotations will move together. They may show seasonal movement, but it will be roughly the same for both, and presumably more moderate and less irregular in amplitude from year to year.

On the other hand, the domestic prices of other articles, particularly of those whose supply can be controlled *ad libitum*, are singularly insensitive, showing not only a small or indeed negligible seasonal movement, but appearing little affected by minor cyclical fluctuations as well. In fact, even major cycles, world-wide in scope, impinge on them with considerably less than full impact. (Compare Charts X, XI, XII, XIII.) They change infrequently, and by relatively large amounts. They are, of course, peculiarly susceptible to monopolistic stabilization. They move horizontally or in staircase fashion.

The third question, how the behavior of a domestic price

7. This, of course, is not a definite figure such as the specie-export point, simply because commodity legislation analogous to gold standard legislation has been rare (except during the War). A fixed commodity par of exchange similar to the gold par rarely exists. Thus while the midpoint of the green band in a spectrum always corresponds to a definite radiation frequency, no such mean value of the range of a domestic price exists. The whole range moves up and down. If the item be produced in two countries the range of domestic prices in both countries will move up and down, simultaneously (cyclically) in so far as general changes in prices bring about simultaneous changes in the prices of the cost factors, and non-simultaneously (in the long run) in so far as changes in the relative effectiveness of labor bring about non-simultaneous changes in the prices or quantities of the cost factors. It need hardly be pointed out that business men clamor for tariffs because thereby the range in which only domestic conditions influence, or can be made to influence price, is widened. The elbow room is thereby increased, if not reserved for them entirely.

compares with that for the same item in other countries, is by far the most difficult to answer. The general formula, to be sure, is simple enough: no *direct* relationship must exist. But, statistically, how is one to prove its absence?

Of the several methods that suggest themselves the most obvious is that of charting the two series of prices and noting the lack of correlation in their movements. If the relationship is erratic,[8] each may be a domestic price. But one must not be hasty in making this conclusion. A host of disturbing factors may have been at work. Such things as changes in the cost of movement or in tariffs and trade regulations, changes in the nature of credit accommodations, changes in terms of delivery, in packaging, in quality of item quoted, and changes in type of quotation, occur so frequently, even in a short period, that an erratic relationship often may seem to exist where a most direct correlation is present. If the two series, however, are different in their seasonal movements, different in variability, considerably different in the timing, duration and amplitude of their cyclical movements, or different in trend — they are probably not directly interdependent.

Suppose, however, that the two price series move roughly together. Does that prove that the two prices are international or directly interdependent? Again one must not be hasty. Almost wholly unrelated prices may appear to vary together, and that for at least three reasons.

First of all, in similar national economies in the north temperate zone a host of domestic prices have simultaneous and similar *seasonal* variations. The fact that the price of eggs, for example, rises each winter and falls each spring in Berlin, Montana, and Berlin, Germany, may merely furnish evidence of a similar reaction of hens, and of human fondness for eggs, to the same kind of weather.

In the second place, it often happens that two prices, both domestic, move sidewise for considerable periods, that is, the

8. Such as was found to be the case for corn prices at Chicago and at Buenos Aires. G. F. Warren and F. A. Pearson, "Interrelationships of Supply and Price," *Bulletin 466*, Cornell University Agricultural Experiment Station (Ithaca, N. Y., 1927), p. 49.

curves are almost straight and parallel. Furthermore, they often have the same secular trend as, for example, wage rates in most countries from 1840 to 1920. But in either event the correlation of movement is obviously spurious. The prices of sand in Paris, Kentucky, and in Paris, France, both show an upward trend in the period of 1896 to 1920, but what of it? Improvements in the technology of excavation, and so forth and so on, may have caused somewhat similar changes in costs of production and in price in both countries within the same year, and yet each price may be domestic.

In the third place, two prices may have no *direct* relationship with each other and yet show similar cyclical movements. Two trees may be miles apart and yet bend in the same direction at the same time and by almost the same amount, because of the same wind. Two reservoirs may have no conduit at all between them, and be at substantially different levels, and yet show similar variations in level, because they are subject to the same conditions of rainfall and temperature. Money rates, capital movements, business psychology, and crop conditions — in truth a number of general forces[9] are listed in the literature on business cycles, tending to make not only wholesale prices but retail prices and wages move together cyclically. It is erroneous, therefore, to maintain that when the fluctuations of a price in one country are roughly similar to those for the same item in another, a *direct* competitive relationship must exist between them.[1]

9. To explain the movement of the price of every domestic commodity by a movement in the price of the identical commodity in other countries, runs counter to every theory of the trade cycle except the pure *Konjunktur* theory, which sees in a general collapse of prices merely a haphazard simultaneity of similar special commodity situations.

1. This point receives no consideration in Mr. Zapoleon's paper mentioned above. Thus, for example, he states, p. 425: "Butter exemplifies a typical situation in commodities erroneously classed as domestic: a large domestic production, insignificant exports and imports, and a measure of independent domestic price fluctuation coexisting with a basically international price movement." After noting that imports during the period 1921–1925 came chiefly from Canada, that the foreign product was not well known, and that exports to England in two of the years were *nil*, he refers to the chart of monthly prices of butter in London and New York for the period and concludes, p. 428: "When

The two criteria discussed so far are both particularistic. Both start with the behavior of individual items. But neither furnishes a decisive basis of distinguishing which are domestic and which are international items.

Suppose, however, that one starts with the whole, rather than the parts. Instead of observing the courses of individual stars, and then classifying them into systems, may it not be easier first to differentiate the cluster, and then determine its membership? Tho the solar system, for example, moves as a whole through space at the rate of nearly twenty miles per second, an aggregate of satellites about Saturn shows movements that are, for the most part, unique. In like manner, tho in some respects all the markets of the world tend to show similar price movements, may there not be domestic markets? How is one to know?

The answer depends, of course, on the meaning given to the word "market." Ordinarily, as for example in popular exhortations to preserve the profitable American market for the American business man, the connotation of the term "domestic market" is roughly identical with total domestic trade. Its volume is judged by the amount of goods and services bought and sold within a country. It is in this sense, but only in this sense, that economists have regarded the

account is taken of such factors, the similarity in broad price movements is striking." But a glance at the chart shows this similarity of movement to consist of similar seasonal swings, reaching their zenith in both markets in the fall, October–January, and their nadir in the spring, April–July. Moreover, the New York price most irregularly varies from 25 per cent above to 25 per cent below the London price. Of course, it "seldom moved out of the range delimited by the shipping radius — freights and the tariff." That it did at all is surprising, except as it indicates how few were the observers and how infrequent the observations, comparing the prices of butter in New York and London. In other words, it shows how solidly domestic the New York price of butter really was. But no prices of goods that are at all moveable normally get out of such a range. The important point is — did one price hover near the export point, the other near the import point, or vice versa? For note that if one makes a thoro-going application of the criterion of graphic correlation of movements in raw price data, most retail price series (which obviously have many direct relationships with wholesale prices) and wage series, will prove to move together better than many international prices.

domestic category as being by far the more important.[2] And, of course, so it is, for the domestic trade of the United States is, in dollars, usually five to six times its foreign trade. Of the things for which a country spends its money incomes by far the larger part is for goods and services produced at home. "The portion of its national dividend that comes from its purely domestic trade is the greater."[3]

Sometimes the market is defined as the area throughout which one price obtains. A domestic market is thus one in which the one-price area is limited by a country's political boundaries. In this domestic market, there will be a domestic price level of sufficient independence to justify separate study, and separate measurement by the computation of an index number. The level may or may not be the same as that of another country, but the constituent elements of the price structure form a unique aggregate of domestic prices, with a unique complex of movements, making many unique adjustments to general world-wide forces.[4]

By far the most useful definition, however, for the purpose in hand is that of Allyn A. Young who conceived of a market as the aggregate of economic activities tied together by trade.[5]

2. See, e. g., F. C. Mills, "Price Movements and Related Industrial Changes," in *Recent Economic Changes* (New York, 2 vols. 1929), vol. ii, pp. 624–629. He compares the pre-war and post-war trends in the prices of domestic and foreign commodities. His computations were based on prices for 294 domestic products, 76 both foreign and domestic, and only 34 foreign products.

3. F. W. Taussig, *op. cit.*, p. 41. For figures of the ratios of domestic to international trade for various countries see Federal Reserve Board, *op. cit.*, p. 2.

4. Not only the impressions gained by travel but statistical comparisons confirm the existence of domestic aggregates of prices having a large measure of movement of their own. See, e.g., A. L. Bowley and K. C. Smith, "Comparative Price Index Numbers for Eleven Principal Countries," *Special Memorandum No. 24* (London and Cambridge Economic Service, 1928). They used the same technical methods throughout, and nearly identical lists of commodities, mostly food products and raw materials. Yet in January 1927 (1913=100) the index numbers for the various countries were as follows: France 123, Holland 131, Sweden 132, Germany 132, Belgium 136, South Africa 139, United Kingdom 141, Canada 143, United States 145, New Zealand 151.

5. Allyn A. Young, "Increasing Returns and Economic Progress," *The Economic Journal*, December 1928, vol. xxxviii, p. 33.

To determine whether an item is mainly domestic thus becomes an economic rather than a statistical matter. Data of price and quantity movement must not be neglected, but a conclusive knowledge can only be gained from men in the trade. How wide is the scope of the conditions of demand and supply with which traders familiarize themselves? If not a single person who is interested in the Chicago butter market ever bothers to look at the price of Danish butter in London, and similarly no one in London ever cares twopence about the price of butter in Chicago — and no third market is of mutual interest — then is it not true that the Chicago price of butter is free from direct dependence on the London price? In short, if the influence of non-domestic willingness to buy or willingness to sell is customarily negligible, the item is a domestic item; if it is considerable, or price-determining, the item is an international one.

II

The statistical procedure followed, as well as the statistical problems met, were obviously determined by the theoretical considerations adduced in the previous section. First, it was necessary to select the commodities, second, the price series, and third, the formula and weights.

In selecting the commodities in each category, main reliance was placed upon the specialized commodity knowledge of economists and traders. What commodities during the period 1926–1930 were almost certainly imports? Which were undeniably exports? And which were, in the main, domestic? No attempt was made to classify all commodities as one or the other. No pretense is made that the list as selected would be the same for another period, before the War or after. Effort was made merely to get a sufficient number (about 45) of each to constitute a satisfactory sample.

Help was sought from all sources. First of all, lists of principal exports and imports were compared.[6] Of the twenty

6. As published yearly by the Chamber of Commerce of the United States. See, e. g., *Our World Trade in 1928* (Washington, 1929), pp. 7–8, and 21–22.

leading exports by value only coal and coke, and undressed and dressed furs, are not included. Of the twenty leading imports by value, the list of omissions is larger, consisting of dressed and undressed furs, unrefined, black, blister, and converter copper, art works, diamonds, unmanufactured tobacco, and leather. Secondly, the lists used in other studies, such as those already mentioned of the Federal Reserve Board and of the Harvard Economic Society,[7] were consulted. Thirdly, the figures of commodity movement were scrutinized for each year. No commodity was considered eligible for the category, export or import, unless the movement over the boundary line exceeded five per cent. That is, net exports had to average five per cent of domestic production in 1927, and net imports had to average five per cent of domestic consumption in the same year. This must not be taken to mean, for example, that *all* commodities in which the average movement was less than five per cent were regarded as domestic. Not at all. But such only were considered eligible. Finally, trade journals and special commodity publications were canvassed and in some cases direct inquiry made from competent men in the business to make sure that the market was mainly an export, import, or domestic matter.

The problem of obtaining suitable price series was both easy and difficult. It was easy in so far as the finding of appropriate international prices was concerned. Only the usual problems arose. First of all, a large number of exported and imported commodities of major importance had to be excluded because homogeneous price data were not available. This applied, for example, to furs, industrial machinery,

7. Invaluable aid in this regard was obtained from Miss Eunice Coyle of the staff of the Society. Hers had been the task of breaking down the U. S. B. L. S. wholesale price index, a task involving the segregation of domestic commodities from exports and imports. She generously turned over for my study the considerable amount of her material containing working data upon which she had based her selection. In addition to the results obtained from inquiries addressed to a number of commodity specialists, there were detailed analyses of international commodity movements and their relation to domestic production, marketings, or consumption, as well as summaries of comparative price behavior.

paints and varnishes, books and printed matter, electrical apparatus, photographic goods, and other complexly fabricated, non-standardized wares among our exports; and to dressed and undressed furs, art works, diamonds, woven fabrics of linen, wearing apparel, watches, laces, etc., among our imports. Secondly, care had to be exercised that the price quotation applied to the quality of article specifically and generally exported and imported. Since only those prices which are actually or potentially received and paid here affect the equilibrium of prices in the United States, export prices were taken in the market of origin and import prices (duty paid, if any) in the port of entry, in most cases New York. Finally, in the interest of economy of effort, price series were taken as much as possible from the publications of the United States Bureau of Labor Statistics, tho for import prices a variety of trade journals had to be used. In such cases, in conformity with the practice of the Bureau, monthly figures were obtained by averaging weekly quotations, and reduced to a 1926 base.

The task of obtaining homogeneous monthly series was difficult, however, in so far as domestic prices were concerned. Tho, theoretically, series of individual incomes or of retail prices should be used, actually they were too hard to get to make the effort worth while. Annual estimates of total income are obviously inadequate. The monthly indexes available, such as those published in the Monthly Labor Review by the United States Bureau of Labor Statistics, apply to the money earnings of factory labor only, not to mention other well-known limitations that make them unsuitable for the purpose in hand. Similarly, the Bureau's monthly index of retail prices pertains only to food, while its cost of living index is too comprehensive, besides being only semiannual. The labor of computing an original index number of retail prices was prohibitive. Therefore, if the job were to be done at all, wholesale prices had to be used.

Here the difficulties began. The prices of some commodities are quoted for only a few months in the year; for example, such undeniably domestic articles as garden truck. Many

others are not homogeneous, and do not pertain to standardized grades. Like the price of custom-built houses, they are subject to all the vagaries of local bargaining. Again, what should be done with items which demonstrably may be affected by the prices of international goods, such as the prices of live cattle in Chicago? Exclude them? Then not even retail prices and wage series would be suitable. The retail price of silk goods, to make but one illustration, obviously has some connection with the wholesale price of silk and the level of money incomes with the range of export prices. Under such a straight-laced procedure one would include only those series that do not move at all. At the end one would prove the assumption with which one started, namely, that domestic prices are less responsive to broad competitive conditions than international prices, or that they are more likely to be fixed by local monopolistic practices.

But precisely because the object of study is to ascertain how international prices impinge on domestic prices, it is imperative to avoid defeating one's purpose by excluding completely those items which are likely to measure the impact. It is, be it noted, this difference in vulnerability of the various domestic price aggregates to changes in international prices that is explicitly the object of measurement. To illustrate the point: Even tho the incidence of changes in the price of an exported article, say lard, undoubtedly *does* work its way backward in some fashion or other to the price of a commodity that is wholly marketed at home, say live hogs, yet precisely the fact that the how and the how much of the working back is the topic of inquiry, demands that the prices of all such domestic raw products be not excluded. Even domestic products that are produced or consumed jointly with an international item ought not on that account to be left out of consideration, for the shipment of the same item to two countries will have different consequences. Shipments of methanol to the United States, for example, cause a rise in the price of charcoal and other joint products in the wood distillation industry, but have no such effect in Great Britain where the industry hardly exists. The use of wholesale prices

therefore is not a regrettable *pis aller*. It is even more than a procedure merely justifiable. It is distinctly to be preferred; always under the condition, to be sure, for each individual quotation, that in the particular market in which it is taken there exists no *direct* foreign competition of the same or a similar article, or a substitute, either on the side of supply or of demand.

The problem of evolving an appropriate scheme of weighting was most difficult. Theoretically, of course, the weights ought to represent in each instance the area or scope of activities directly affected by the change in price; but, actually, where and what are the figures that afford proper representation?

One method is to use an aggregative type of formula, and weight the export or import prices by the average quantities exported from, or imported into, the United States. This device, however, is not very satisfactory for the purpose of measuring the repercussions of international prices on the domestic price structure.[8] For the importance, either to the domestic or the international price aggregate, of a monthly change in the price of an export or import commodity, by no means varies with the particular average percentage which it may happen to form of total export or import trade. Cotton, for example, normally constitutes by value more than one-third of American exports. Does that mean that a change in its price has more than one-third of the total influence on American domestic prices exercised by changes in the prices of all exports? Or does it merely indicate specialization? Does the ranking of individual items among exports or imports indicate their place in American production or con-

8. Needless to say, it is eminently adapted to the end of providing a suitable deflator of export and import values in order to get at export and import quantities, particularly where annual indexes are computed, whether to make possible an estimation of the barter terms of trade, or to measure fluctuations in annual physical volume. See, e.g., F. W. Taussig, *op. cit.*, pp. 411–413; T. J. Kreps, "Import and Export Prices in the United States and the Terms of International Trade, 1880–1914," *Quarterly Journal of Economics*, August 1926, vol. xl, pp. 172–175, and United States Department of Commerce, *The Commerce Yearbook for 1929* (Washington, 1930), p. 97.

sumption, or does it depend in large part on the percentage of domestic output of the item which happens to move across the national border? This, for exports, varies from 5 per cent to more than 50 per cent of production, while for imports it ranges from less than 15 per cent to nearly 100 per cent of domestic consumption. Yet is it not obvious that the international price in most instances dominates the market for all of the article?

A circumstance tending in no small way to aggravate the theoretical unsatisfactoriness of this mode of weighting is the fact that for many exports and imports the figures of physical quantities are not available. Indeed, the most important items, such as automobiles, electrical equipment, and industrial and farm machinery, are reported either only in dollars or in such unsatisfactory terms as number (of all makes and prices indiscriminately). From the nature of the case, really good quantity figures exist only for raw materials and other standardized items, that is, for probably less than 60 per cent of the total export. Thereby the importance given to cotton in an aggregative total weight is increased from 35 per cent out of a total of 100 per cent to 35 per cent out of 60 per cent; that is, it is nearly doubled. Moreover, the smaller the sample, the greater the distortion, a fact militating almost conclusively against the use of this type of weighting for group indexes. To require good quantity figures in addition to homogeneous price series not only makes the overweighting of raw materials more arbitrary and uncertain, but virtually precludes the obtaining of a representative sample of exports, consisting, as they do, so largely of highly complex manufactures. Therefore, the method of weighting by quantity movements in international trade was not used.

A second method is to weight the several prices by domestic production, marketings, or consumption. But which of these furnishes a reliable measure of the horizontal and vertical reach of the influence of a given price? None of them. The weights, in some cases, will be too large: the international price may affect only a part of domestic production or consumption; more frequently they will be too small: no repre-

sentation will be given to a large volume of substitutes. The price of cotton goods, for example, has a direct competitive relation with that of certain wool, rayon, and silk fabrics. Similarly, a change in the quotation for coconut oil, imported to the extent of a quarter billion pounds yearly, directly affects the prices of all the other vegetable oils, including cottonseed oil, whose annual production is more than one and a half billion pounds. The figure for domestic production, marketings, or consumption proves to be a thoroly arbitrary weight.

A host of lesser statistical difficulties are also present. For example, the official trade data (as published in the *Monthly Summary of Foreign Commerce* or the *Annual Reports concerning the Commerce and Navigation of the United States*) frequently differ from the production, marketings, or consumption data (as published by the Census) in respect to classification and description of commodities and units of measurement. In many cases the import or export prices apply to gallons or barrels, or units, while marketings are given in pounds. In other instances the marketings data are given for special periods such as the crop year, while import and export prices obviously have reference to the calendar year. Finally, the statistics of production, of marketings, and of consumption are thoroly unreliable for many of the items, and in not a few cases wholly unavailable. Of course, for those price series which enter into the wholesale price index computed by the United States Bureau of Labor Statistics, there are the figures of marketings utilized by the Bureau. But even these have a few well-known limitations. To cite but one illustration: The marketings of molasses, representing the amount produced, plus imports, minus the amount retained for further manufacture and reëxported, are frequently less than the imports.

Finally, the device of group weighting may be used. The several prices may be grouped together, either according to the sub-heads under which exports or imports are reported by the Department of Commerce, or in correspondence with the sub-groups into which the Bureau has broken down its

general wholesale price index, or in conformity with some other rule of classification, say price behavior, country of origin, region of destination, or extent to which goods are processed. But such a procedure embodies considerable theoretical weakness and arbitrariness.[9] Moreover, the weights are almost necessarily value figures. Lastly, it is practically impossible to get an equally good sample of prices for all groups.

If the weighting *must* be arbitrary, it is evidently more advantageous to have a relatively simple system than a complex one. With this in view, the so-called unweighted geometric mean of the price relatives was considered the least unsatisfactory. No attempt was made to weight items, except to represent certain important commodities by more than one price series. Tho raw materials, for example, and other commodities exchanged in large volume, must not be overweighted, they ought, by the same token, not to be underweighted. Rough allowance was accordingly made on the basis of such considerations as the proportionate volume of trade, production, and consumption; the number of major markets in which quotations could be got; the number of regions in which the item was produced and consumed; the probable reach, upward and sideward, in the domestic and world price structure, of a change in its price; the number of grades in which it was commonly bought and sold; and the number and geographical spread of the countries which engage in international traffic in the article. Since raw materials like cotton, wool, silk, petroleum products, and wood pulp are practically certain to receive arbitrary weights under almost any system of weighting, it was considered the lesser of two evils to have the degree of arbitrariness simple and obvious rather than complex and inascertainable. Moreover, the same procedure could be used throughout, a factor increasing the comparability of the indexes.

9. See A. G. Silverman, "Monthly Index Numbers of British Export and Import Prices, 1880–1913," *The Review of Economic Statistics*, August 1930, vol. xii, p. 144.

III

The results may now summarily be indicated. No attempt will be made to interpret them.

The price series utilized are described in Table I. The amount of duplication is apparent from the fact that the export list consists of 67 series and 53 commodities, the import list of 64 series and 47 commodities, while the domestic list consists of 62 series and 45 commodities. Tho the general grounds for inclusion and duplication of series have already been explained, a couple of illustrations of the manner and type of consideration necessary for each item may not be superfluous. Cotton and leather, for example, are each represented by three series in the export index, an equality in weighting that seems contradictory to familiar knowledge. But the apparent defect is remedied, since cotton is again represented to a considerable degree in five cotton goods series, while leather manufactures, such as boots and shoes, are not included at all. The real weighting of cotton and cotton manufactures versus leather and leather manufactures is as eight to three. One more illustration: wool and wood-pulp each appear five times in the import index while sugar and rubber appear but once. This on the face of it seems absurd. It is probably the least defensible. Yet the wool series, corresponding in reality to two almost distinct commodities, carpet and clothing wool, represents four continents. Moreover, the considerable trade in carpets and in woolen goods, a factor of no mean importance to the economic life of many countries including England, France, and Germany, is not otherwise included. The wood-pulp series similarly represents fundamentally two raw materials, one serving as the basis of the trade in paper and paper manufactures, the other as the raw material for the new, rapidly growing, and widely branching cellulose chemical industries. Rayon, to name but one example, has not only called into existence several well-known giant corporations with world-wide activities, but has acquired an international importance in the textile industries, which, tho by no means as great as cotton,

is not far from being as significant as wool or silk. On the other hand, sugar goes direct to the domestic consumer as sugar or candy. It does not give rise to a heterogeneous list of manufactures that have appreciable bulk in international trade. Rubber, besides coming from but one region, has a place of major importance in the imports of the United States only. In world trade and consumption (in so far as the woefully inadequate statistics thereof warrant comparisons), rubber and rubber manufactures as well as sugar and sugar manufactures have a rank distinctly lower than wool and wool manufactures, and wood-pulp and cellulose products. Finally, as will appear later (see Chart VI), whatever may be the disproportionate weighting involved, it did not distort the index.

The primary indexes are shown in Chart II. The movements of the international and domestic price indexes run nearly parallel up to the middle of 1928. (Compare also the last two columns of Table II.) Both fall from a level of 101 in March, 1926, to 94 in June, 1927, and then move sidewise until June, 1928. Thereafter, however, they pursue different courses. Domestic prices move upward until September, 1929, then beginning to fall. International prices go downward at once. The rapid decline (2 points a month) in domestic prices does not begin until February, 1930. In international prices it begins four months earlier. The leaders in this acceleration of downward movement are the import prices. They go down on the average two points a month from September, 1929, until the end of 1930, that is, at an accelerating rate. Thereby they reverse completely their relationship with export prices. For up to September, 1929, they had been consistently higher. Thereafter, they are not only lower, but increasingly so.

The resistance of domestic prices to international prices seems at first consideration surprisingly slight and insignificant. One would expect the domestic index to be insensitive and tend to remain high. A glance at Chart III, however, shows that the domestic price index measures the extent of domestic commodity inflation very conservatively. From

July, 1927, until September, 1929, both of the all-commodity indexes are higher than the domestic index, despite the fact that the former include both exports and imports. What is the reason? Why are they not consistently lower all along as they are after September, 1929?

Two explanations suggest themselves. The first is that our international price index is too low. If, upon detailed examination of the constituent price series, it appeared that the Annalist and U. S. B. L. S. indexes included export and import commodities not represented in the international index, and if these showed a price movement upward which more than sufficed to offset the decline showed by the international index, the rise in the general indexes would, of course, be explained. But this does not even begin to be true. The export and import indexes contain virtually all of the important international commodities included in either of the all-commodity indexes.

The other explanation is that the domestic index is too low. A careful scrutiny of the behavior of the price constituents of the two all-commodity indexes brings to light two reasons which may explain why the domestic index moves horizontally in 1928 and 1929 while the two all-commodity indexes show an unexpected rise. The first is that both all-commodity indexes contain an additional number of domestic commodities (in particular, a dozen or so livestock series, heavily weighted in the aggregative total), all of which rose more than 50 per cent in 1928 and 1929. (See the series for cattle in Chart I.) In other words, in eliminating all but a couple of the livestock series from the domestic list, *a priori* skepticism may have been carried to excess. The number of domestic commodities seems to be larger than appeared theoretically probable.

The second reason is that the all-commodity indexes include quotations from a larger number of markets. The use of the plural in this regard may at first seem strange. But it is obvious that in the vast and diversified area enclosed by the political boundaries of the United States several substantially independent markets may exist for the same com-

modity.[1] Their number, their scope, and their contour will, of course, depend on the economic and physical characteristics of the commodity. For some commodities, such as sand or gravel, the number may be large; for other items, say livestock,[2] it may be but one. In either event, when selecting domestic prices, one probably does well to have a definite city in mind as the *situs* of the domestic market. New York and Chicago being by far the largest and most important markets in the United States, and quotations in each being much more numerous than in other cities, they were logically the original datum points of survey. At the beginning it was hoped that a sufficient number of domestic prices could be got from these two cities alone to make a good sample. But even with the inclusion of a couple of somewhat doubtful items (notably salt pork and wrapping paper), the initial expectation had to remain unfulfilled. The next best plan was thought to be that of including as few series in other markets as possible, and particularly to prefer the use of composite series which included Chicago and New York.

The downward pull exerted on the domestic index by reason of the endeavor to obtain as many New York series as possible is apparent from Chart IV. Two aspects should be noted in particular. The first is the shift in levels of the Chicago index and the New York index. This is the more noteworthy because 10 of the 20 series used in computing the former pertain to an article which is identical with 10 of the 23 series averaged in the latter. (See the list of domestic commodities in Table I.) But even these show a similar

1. See, e. g., A. E. Wells and D. E. Fogg, "The Manufacture of Sulphuric Acid in the United States," *Bulletin 184*, Bureau of Mines, United States Department of the Interior (Washington, 1920), p. 10. They divide the United States into six zones which are virtually noncompetitive with respect to sulphuric acid, each having its own peculiar conditions of demand and supply.

2. Even here the price on the Pacific Coast markets fluctuates irregularly about the Chicago price with price spreads in the period 1923–1928 varying from 40 per cent below to 25 per cent above the Chicago market. Movement from the "divides" in the Mountain States set limits, however. See C. E. Voorheis and A. B. Koughan, "Economic Aspects of the Beef Cattle Industry," *Bulletin 461*, University of California Agricultural Experiment Station (Berkeley, 1928), p. 76.

spread.[3] Chicago prices thus ranged higher than New York prices by an amount that grew steadily from April, 1927, to August, 1929, attaining then a maximum difference of 11 points, all of which was wiped out by December, 1930. When the fact is recalled that nearly all the important livestock series were omitted from the Chicago series, it seems probable that this numerical measure of the spread understates rather than overstates the real extent of commodity price inflation in Chicago.

The second aspect of Chart IV meriting attention is the striking similarity, even in detail, of the direction of fluctuation in three of the years, 1926, 1929, 1930, coupled with an even more striking scissors effect in 1927, and the last part of 1930. From January to July, 1927, the New York index declined 11 points from a level three points above the Chicago index to one eight points below it. Inasmuch as Chicago and import prices moved sidewise, and export prices fell very moderately (only 3 points), the decline of New York prices in 1927 probably corresponds to a real shift in relative level.

This fact, if really present, is of considerable importance. The existence of a plurality of domestic markets in the United States is not generally emphasized. The tools of international trade theory and monetary theory are but infrequently used to explain *regional* differences in wages and prices,[4] or the adjustment of debits and credits between localities within a country. Yet, as has already been noted, some writers deny the existence of substantially independent wholesale price aggregates even for countries as a whole. They argue that there are not only world-wide isotims for all individual wholesale prices, but also world-wide isographs of price levels. Now while the former exist for individual commodities, and change with the seasons, with changes in freight

3. A test was made by computing sub-group indexes of the ten in each market. These indicated a similar disparity in movement and level.

4. Certain writers, however, have brought out the significance of regional prices; for example Zapoleon in the article previously referred to, and at an earlier date Prof. J. H. Williams in *The Economic Journal*, June 1929.

rates, and so on,[5] the latter ought not to shift their contour except when a new differential has developed in the relative effectiveness of labor — an occurrence which presumably takes time. Shifts in contour due to domestic bank policy or tariff legislation may be regarded as improbable. Yet here there appear not only one domestic price aggregate but two. Each seems to be characterized by unique movements. At any rate, the evidence for the existence of a persistent isotimic relationship is by no means wholly affirmative.

Do the New York and the Chicago indexes, then, represent truly distinct domestic price aggregates? This can be tested either by utilizing another measure and comparing results or by examining the reliability of the indexes themselves. The first test is made graphically in Chart V. As has already been noted, indexes of money incomes theoretically ought to furnish the best measure of domestic prices. What do they show here?

A fairly close correspondence is present in one instance, but a considerable divergence in the other. This result, while disappointing, was not altogether unexpected. Wage series show special lags of their own. Here, moreover, they represent factory labor only, and apply to a different unit — the State of Illinois rather than the City of Chicago, the State of New York rather than the City of New York. Furthermore, one of the theoretical assumptions indispensably underlying the test is that no changes occur in the relative effectiveness of labor in the production of domestic commodities. High money incomes do not *compel* domestic prices to be high, for labor may be as effective in producing domestic goods as it is in producing international goods. But high money incomes do bring about greater likelihood that domestic prices will be high, for the theoretical limit to which wage inflation can boost prices is higher for domestic goods than for exports. Thus high New York wages need not mean high New York domestic prices. The drop of the latter in 1927 may repre-

5. See, e. g., Holbrook Working, "Factors Influencing Price Differentials Between Potato Markets," *Journal of Farm Economics*, October 1925, vol. vii, p. 378 *et al.*

sent an increased effectiveness of labor in domestic commodities. All this, of course, is mere guesswork. The first test is inconclusive.

The second test is one that needs to be raised in connection with all the primary indexes. Are the fluctuations sufficiently large in extent to make reasonably probable the occurrence of real changes in the movements of the respective price aggregates which they measure? May not the different values of the indexes fall within the range of the mathematical errors of sampling? Might not the use of a formula other than the unweighted geometric mean yield indexes which would show a wholly different complex of movements? Have any distortions been introduced into the domestic, export, and import indexes by the arbitrary method of weighting used?

A satisfactory answer to these doubts might at first glance seem to be impossible without making a number of tests, one or more for each question. The standard errors or probable errors of sampling might be computed for each item of each index, a procedure involving a study of the frequency distribution of price changes for each month. Or other formulae might be employed, or computations of the indexes made without the duplication.

But a much simpler test seemed to afford results which, while not completely satisfactory, at least were thought to indicate that more laborious procedures were not worth while. This was the device of comparing graphically the unweighted geometric mean of each index with the median. The latter is free from distortion due to extremes. It reflects the *number* of price changes rather than their extent. It may show how far the rise or decline of the geometric index represents a bias due to duplication or to individual price fluctuations that are considerably out of line.

The correspondence (see Chart VI) is, on the whole, fairly close. Postponing for the moment a discussion of the import, export, and domestic indexes, and returning to the question of independent domestic aggregates of prices in New York and Chicago, note that the medians, by agreeing so substantially with the unweighted geometric indexes, decidedly

strengthen the inference already drawn from Chart IV that Chicago prices were inflated relative to New York prices. But note also that the decline in New York prices in 1927 is not shown so quickly. Not until February, 1928, in fact, does the median settle at the lower level. The reason is, of course, not far to seek. Domestic prices tending to move sidewise, the median remains at 100 throughout 1926. The break in 1927, tho fairly sharp, starts with only a few items, and pulls down the geometric mean. Gradually it spreads to the majority of the prices. Then the median also shows the decline. Except for periods of fairly rapid price change, the median and geometric indexes of New York and Chicago prices are substantially the same, thus indicating that the previously noted spread between them is probably real and not due to an accident of computation.

When the medians and unweighted geometric means of the other series are compared, it is noteworthy that precisely where a bias due to duplication was most to be feared, namely in the import index (because of five wool and five wood-pulp series), the correspondence of the median and geometric indexes is closest. Except for the fact that the geometric is lifted in 1928 by the rise in prices of foods (see Chart X), the indexes are nearly identical. In the export and domestic series, however, in which the overweighting was less, a systematic divergence appears: the median is consistently higher. The reason is that the prices, among the exports, of chemicals and petroleum products (see Chart VIII) and, among domestic commodities, of foods (see Chart IX) were consistently low and declining. Even this divergence, however, confirms the previous argument that the beginnings of the recent price decline took place in international commodities. The domestic index is shown again not to be too high.

The group indexes serve a two-fold purpose. First, they show to what extent price fluctuations were localized in particular classes of industries. Second, by comparing the export, import, and domestic prices for each type of industry, the group indexes afford a glimpse of the extraordinary complexity of cross currents of adjustment which, in discussions

of the primary indexes alone, are so readily summarized and averaged. In all cases, a simple unweighted geometric mean is taken of the items listed under the respective sub-classifications in Table I.

The groups selected may at first seem strange. There are, of course, several possible principles of classification, but usually sub-groups represent either industries or stages of manufacture. Here two additional considerations were present. In the first place, it was thought, in view of the current emphasis on the vital part played by consumer purchasing power in business fluctuations, that a study of food prices might be illuminating. Secondly, in the belief that some of the most significant adjustments in international trade between countries take place through the respective chemical industries, inasmuch as these joint-cost, multiple-product industries have greater power of adaptation to the currents of demand and supply than single-product industries, the chemicals were isolated for study.

A comparison of the movements of the import index with that of its sub-groups (Chart VII) shows that the raw materials not only were persistently lower than the general import index, but began to decline from the very first of 1926, and again in March, 1929. In March, 1926, the index was 111; in December, 1930, it was 57. The food index, on the other hand, and particularly the prices of coffee and bananas, rose in 1928, but declined most precipitately after October, 1929. The prices of chemicals, on the whole, resisted the price decline, probably reflecting cartel operations in such items as potash salts and nitrate.

Raw materials play a somewhat different rôle in the movements of the export index. (Chart VIII.) Up to the beginning of 1929 they were distinctly higher in price than other exports. The items primarily responsible for this firmness were the agricultural raw materials, particularly tobacco and cotton, and copper. But the decline thereafter was nearly perpendicular, in fact much more rapid than that of any other group. The index went down from 107 in March, 1929, to 66 in October, 1930. The food index, on the other hand,

declined until the middle of 1929, but rose during the last half of that year, contrary to the trend of general export prices, a movement caused primarily by higher quotations for oranges, prunes, raisins, and flour. In 1930 it fell, but it fell more gradually than other groups. The movement in chemical prices is unique. The real liquidation there occurred in 1927, the index falling twenty points between September, 1926, and November, 1927. Moreover, the decline was practically continuous, the index being persistently lower than the general export index. The index of finished manufactures, on the other hand, rose in 1927, and, tho declining after September of that year, remained persistently above the general index.

The sub-groups of the domestic index (Chart IX) show a complex of movement that is highly characteristic and distinct. Two peculiarities in particular should be noted: the persistent downward trend (neglecting seasonal rises) of the food index, and the buoyancy of the prices of raw materials and finished manufactures, even through 1930.

The unusual behavior of the prices of domestic foods is even more clear in Chart X. Their pronounced seasonality contrasts sharply with the movements in the prices of exported and imported foods. Their general trend has, however, been downward at about the same rate as the prices of exported foods. The index showing the familiar governmental figures for retail prices of foods in 51 cities shows less pronounced movements than any of them. But whereas its movements show only slight correspondence with import prices, and somewhat less negligible correlation with export prices, the co-variation with domestic prices is considerable, reflecting every seasonal movement. The prices of domestic goods whose supply depends on the whims of nature thus exhibit a greater seasonality than do the prices of similar imported or exported articles.

Tho the prices of some domestic commodities move violently, others tend to move horizontally. This is shown very clearly by Charts XI, XII, and XIII. In each of these the domestic prices remain relatively firm. For chemicals the

firmness of domestic prices is considerably greater than appears in Chart XI, for the all-chemicals index is obviously pulled down by the prices of international chemical commodities, and in particular by those of chemical exports. The nearly horizontal movement of the prices of domestic raw materials and finished manufactures is also remarkable. How far this indicates producer control over supply and price, and how far price-fixing by custom rather than active competition, is of course impossible to state. But it does seem to show that there are a number of commodities whose prices are not directly influenced by international conditions. Their sidewise movement has continued despite one of the worst collapses of prices in the annals of business fluctuations.

The statistical results just presented in the table and in the charts stir up a host of new questions. Why were export prices low? Did they stay down because of increased effectiveness of labor, particularly in chemicals? Or were export prices low because of the large export of American capital? Or was there a decreasing relative intensity of foreign demand for American exports? As the period progressed, might not the inelastic demand of Europe for goods wherewith to repair the damages suffered during the Great War have counted less and less? Or was the relatively diminished monetary demand of foreigners for American goods due to the change in the character of American exports: from raw materials to manufactured goods, from foodstuffs to automobiles?

Why, moreover, should the prices of tobacco and manufactured goods among our exports, and the prices of coffee, bananas, and fertilizers among our imports, as well as the prices of raw materials and finished manufactures among domestic goods, tend to stay up? Why should the prices of other imported and exported raw materials go down to figures so low as to cause utter economic prostration in the areas producing them? Have we here a demonstration of the strength of giant monopolistic enterprises, as against the helplessness of small competitive enterprises?

What, finally, caused the inflation in Chicago? Was that merely a special situation in livestock, spreading by contagion to other commodity markets? Or did the banking and speculative circles in Chicago permit an especially large excess of "new era" optimism to flourish there? These and many similar questions have been almost irresistibly intriguing, but they have been deliberately left to specialists in theory.

In this paper attention has been rigidly limited to two problems relative to which the available evidence seems strongly to suggest at least two conclusions. In the first place, there are domestic markets and international markets, domestic goods and international goods, domestic price aggregates and international price aggregates. Relative to import prices, export prices in general, but particularly those of chemicals, were low. Relative to international prices, domestic prices in general, and especially those of raw materials and finished manufactured goods, remained high. The distinction made by classical theorists in this respect was found to facilitate considerably the handling of price-movement data of otherwise unmanageable extensive and intensive multiplicity.

In the second place, a distinct divergence in level and movement was found to exist between the New York price group and the Chicago domestic aggregate. Much in the same manner that the general electro-magnetic and gravitational equilibrium of the stellar universe contains within it solar systems and other planetesimal nuclei, the general equilibrium of domestic prices was found to contain within itself distinct aggregates of local prices with a substantial measure of independent movement. Relative to New York there was inflation in Chicago.

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CHART I

Types of Domestic Price Behavior

(Chicago Prices. The respective sources are given in Table I)

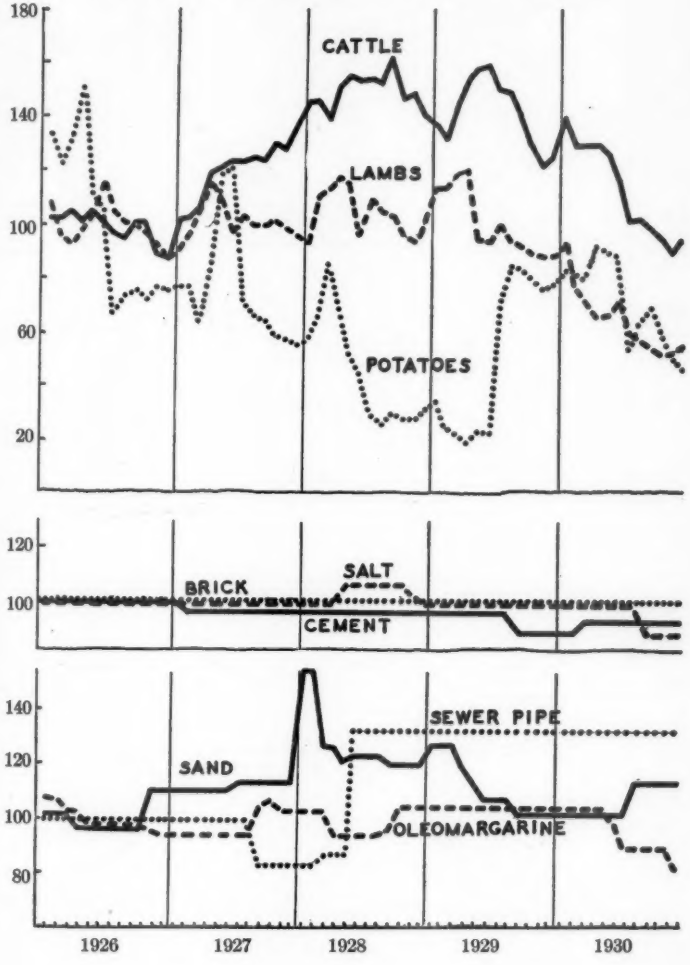
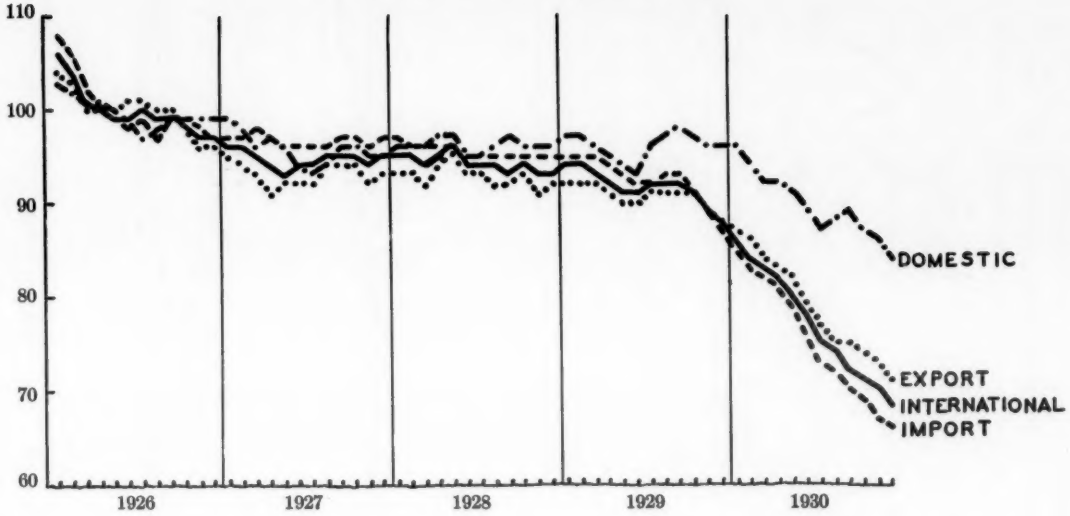


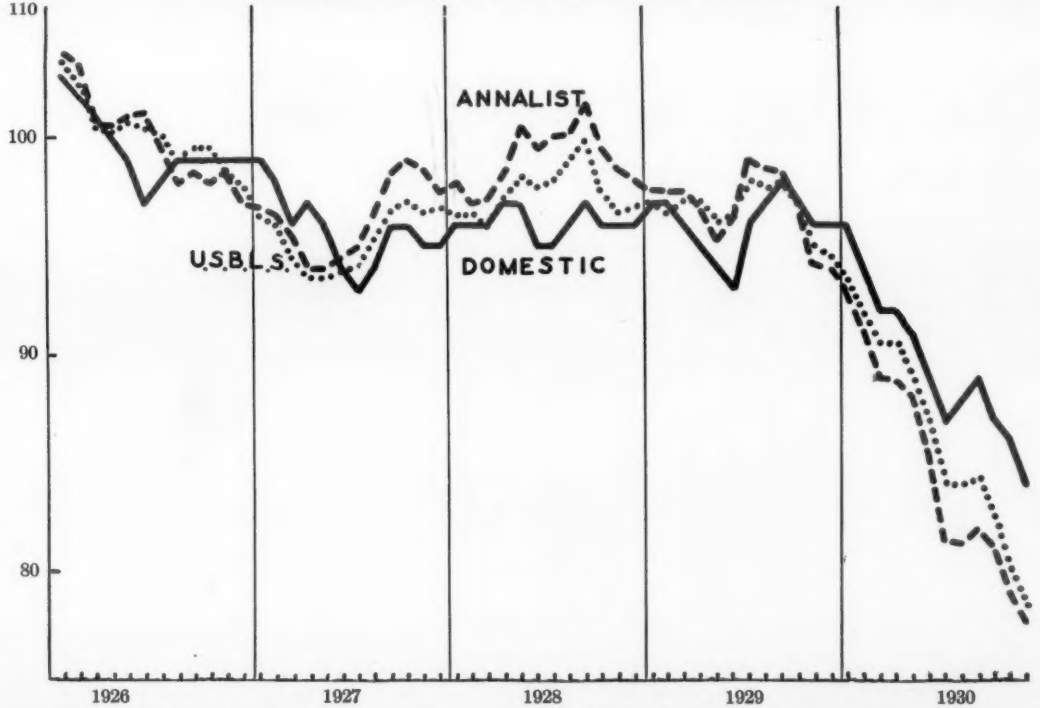
CHART II

Domestic and International Prices



The Domestic Index and Two All-Commodity Indexes

The Domestic Index and Two All-Commodity Indexes



Sources of data: Annalist index from *The Annalist*. Base year of original figures is 1913. Their average in 1926 is here taken as 100. U.S.B.L.S. index is from the *Bulletin on Wholesale Prices* of the United States Bureau of Labor Statistics.

CHART IV

Chicago, New York and Domestic Prices

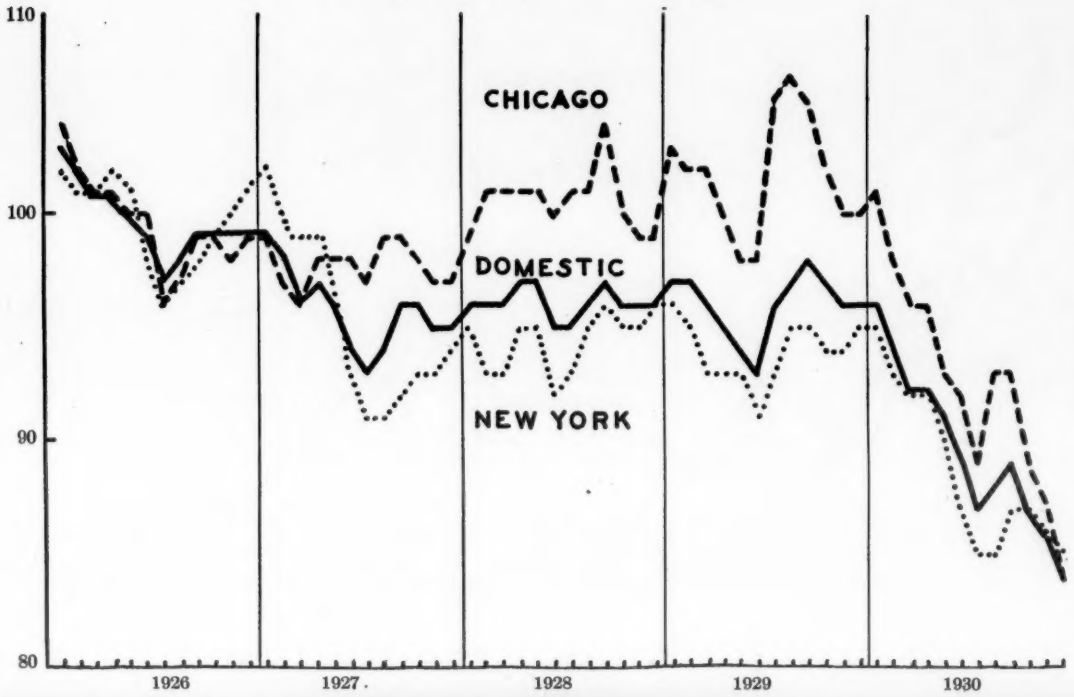
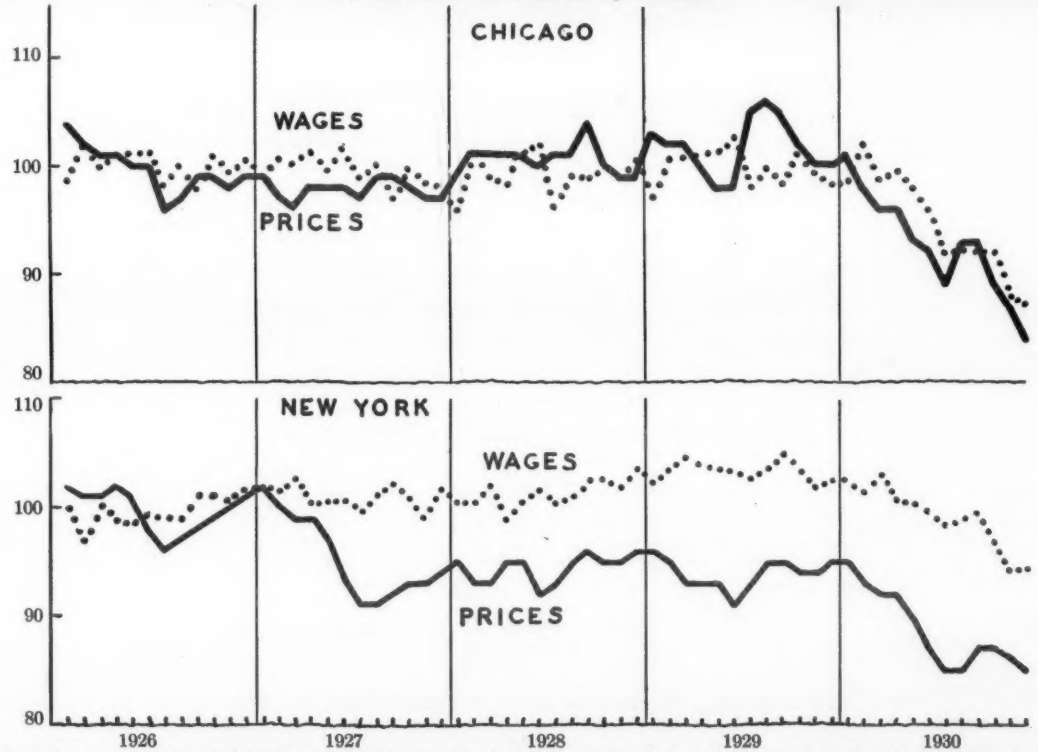


CHART V

Domestic Prices and Money Incomes

CHART V

Domestic Prices and Money Incomes



Wage data are relatives (1926-100) of monthly averages of weekly earnings of factory labor, totals, 23 industries, Illinois and New York. Source: United States Department of Commerce, Survey of Current Business.

CHART VI

Medians and Unweighted Geometric Means of the Primary Indexes

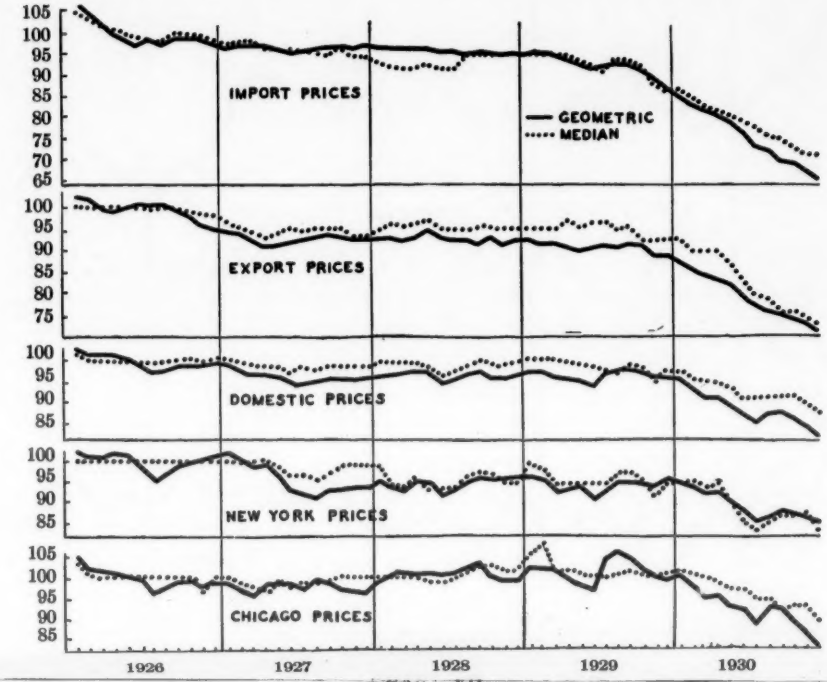


CHART VII

Import Index and Sub-Groups

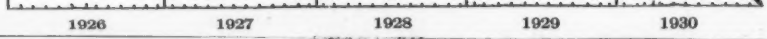


CHART VII

Import Index and Sub-Groups

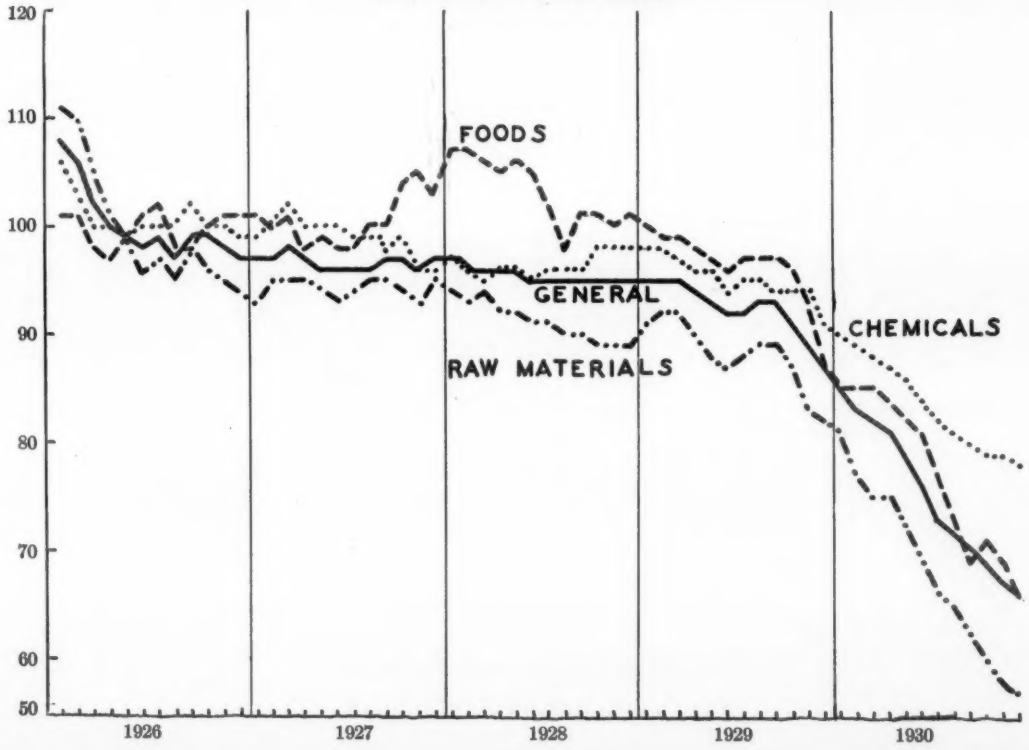


CHART VIII

Export Index and Sub-Groups

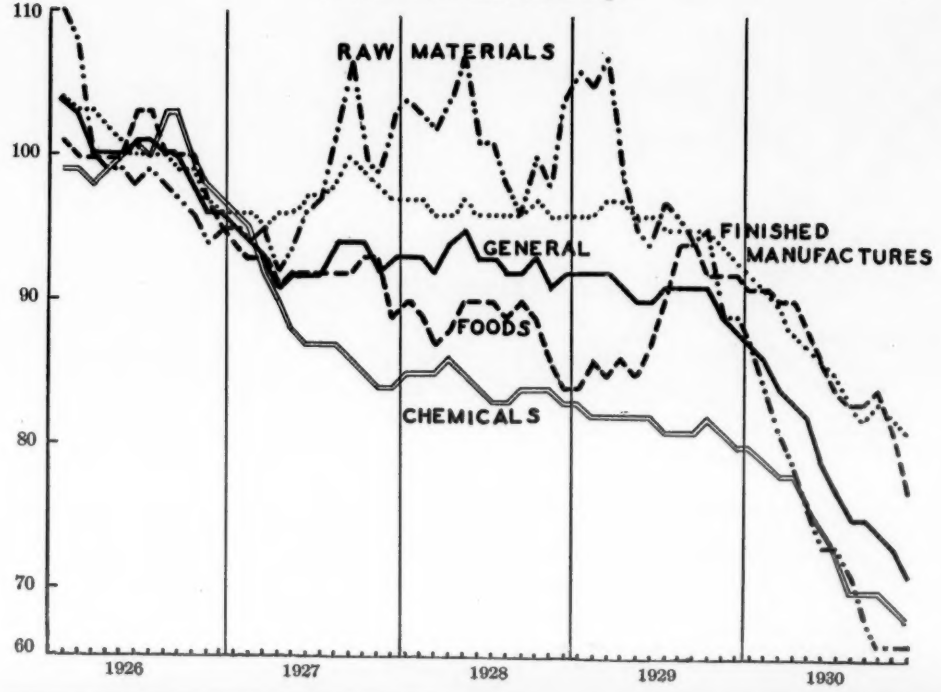


CHART IX

Domestic Index and Sub-Groups

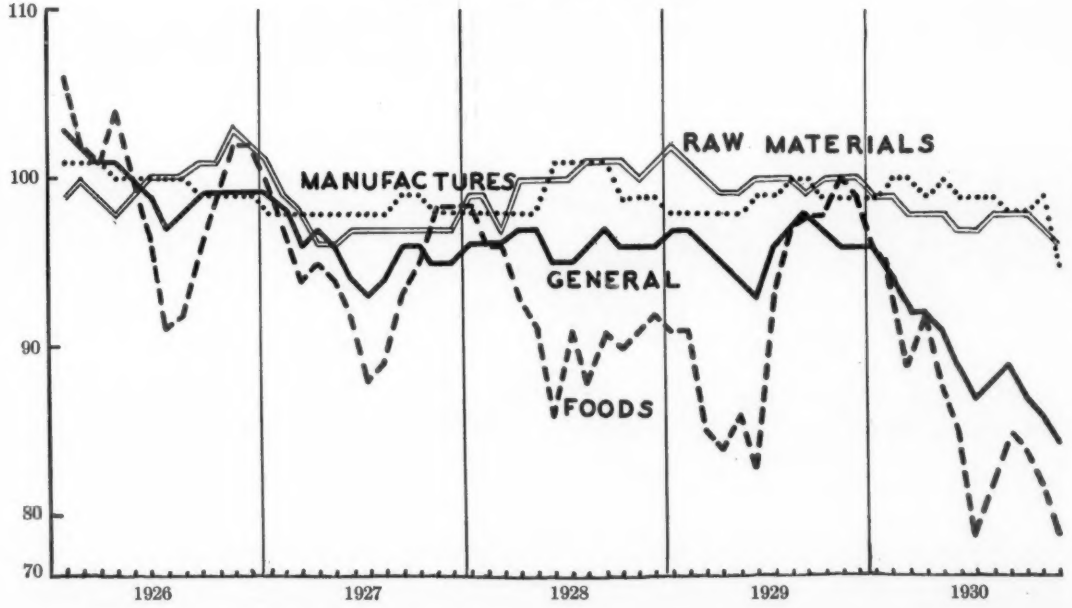
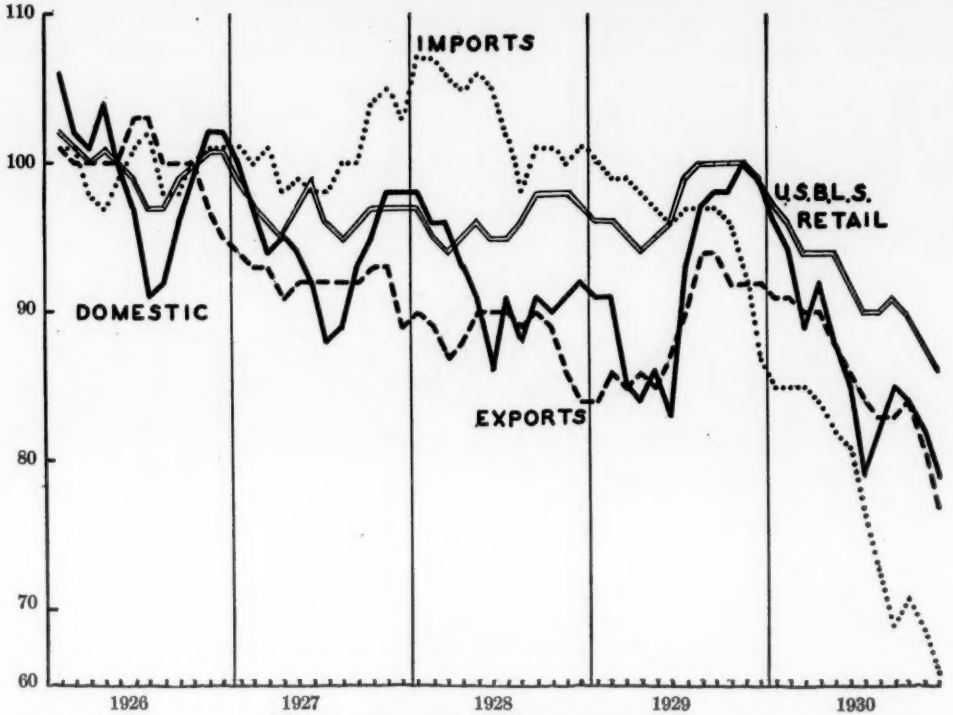


CHART X

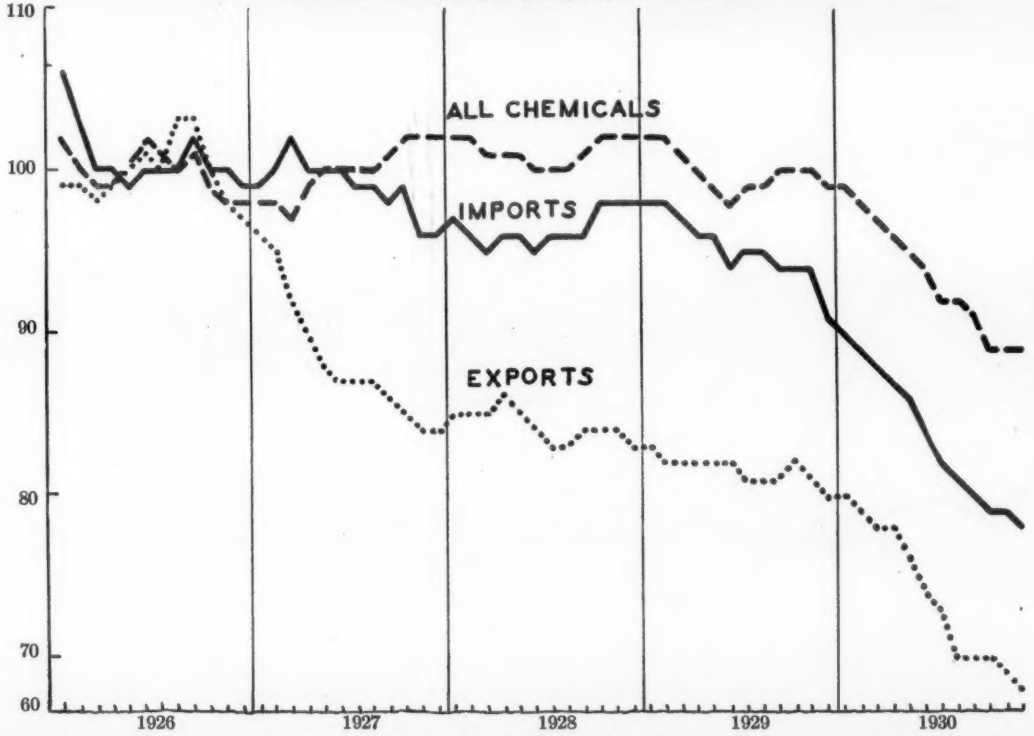
Food Prices, Export, Import, Domestic



Source of U. S. B. L. S. retail data: Computed (1926 = 100) from relatives (1913 = 100) of retail prices of foods for 51 cities, published by the United States Bureau of Labor Statistics in the *Monthly Labor Review*.

Chemical Prices, Export, Import, All Chemicals

Chemical Prices, Export, Import, All Chemicals



Source of all chemicals data: Sub-group "chemicals" and Group VIII, "Chemicals and Drugs" of the wholesale price index published in the monthly *Bulletins on Wholesale Prices* by the United States Bureau of Labor Statistics.

CHART XII

Prices of Raw Materials, Export, Import, and Domestic

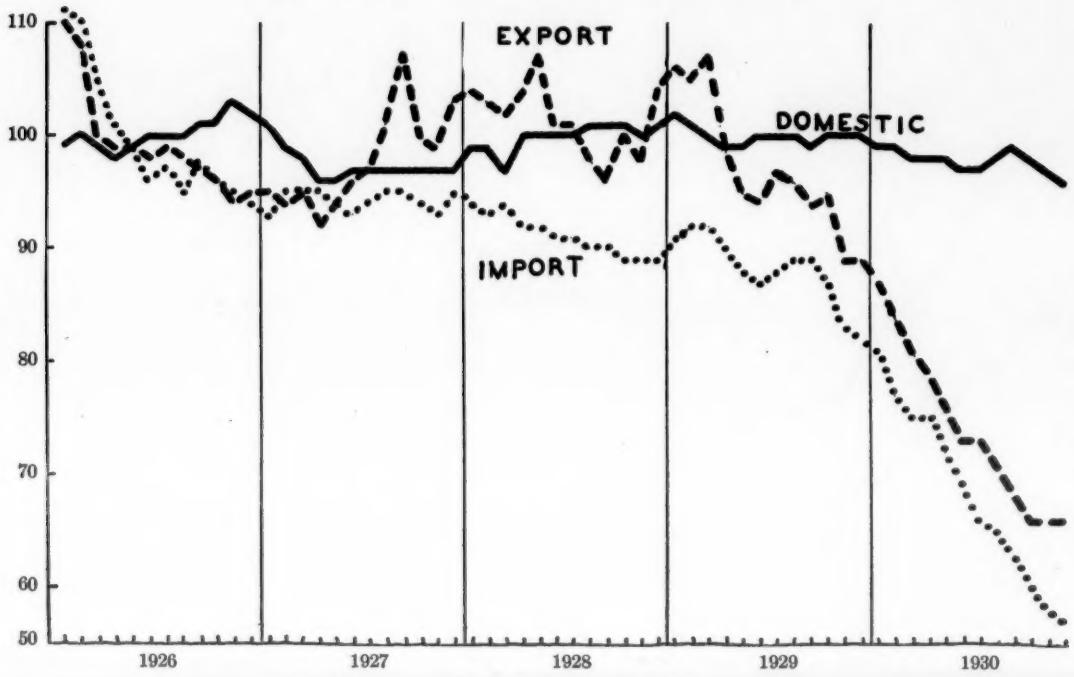


CHART XIII

CHART XIII

Prices of Finished Manufactures, Export and Domestic

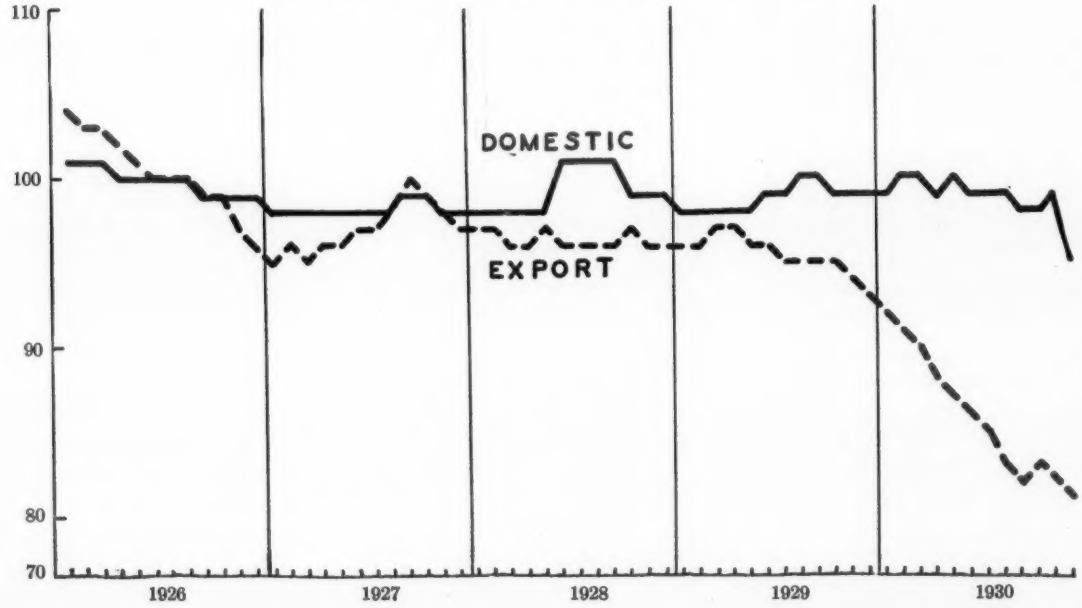


TABLE I

PRICE SERIES

(In the New York market unless otherwise indicated)

Export	Import	Domestic
A. Foodstuffs	*A. Foods and Beverages*	*A. Foods*
1. Oranges, choice, California, box, Chicago	1. Cocoa beans, Arriba, lb.	1. Eggs, fresh, per dozen, firsts
2. Milk, case, 48 cans, condensed	2. Coffee, Brazilian grades, Rio No. 7, lb.	2. Eggs, fresh, per dozen, firsts, Chicago
3. Milk, case, 48 cans, evaporated	3. Coffee, Brazilian grades, Santos No. 4, lb.	3. Potatoes, white, per 100 lbs.
4. Lard, prime, contract, lb.	4. Currants, cleaned, Amalias, average price, dried, lb.	4. Potatoes, white, per 100 lbs., Chicago
5. Pork, bacon, strips, 6 to 7 lbs., Chicago	5. Bananas, Jamaica, bunch, fresh	5. Bread, loaf, before baking, lb.
6. Hams, cured, lb., Chicago	6. Pepper, black, lb.	6. Bread, loaf, before baking, lb., Chicago
7. Salmon, Alaska, canned, red, No. 1, tall, dozen cans, factory	7. Sugar, raw, 96° centrifugal, lb.	7. Butter, creamery, firsts, lb.
8. Peaches, canned, standard 2½s, dozen	8. Tea, Formosa, fine, lb.	8. Butter, creamery, firsts, lb., Chicago
9. Prunes, California, 60–70s dried, lb.	9. Coconut oil, Manila, crude, spot, barrel, lb.	9. Beef, fresh carcass, steers, lb.
10. Raisins, Coast, seeded, average price, dried, lb.	10. Olive oil, edible in barrels, gal.	10. Milk, fluid, fresh, 100 lbs.
11. Starch, corn, lb.	*B. Chemicals*	11. Poultry, dressed fowls, dry packed, lb.
12. Flour, barrel, winter wheat, patents, Kansas City	1. Copal gum, Manila, standard sorts, lb., mill	12. Crackers, soda, lb.
	2. Shellac, T. N. bags, lb.	13. Peas, No. 2, canned, per dozen, state and western fancy

13. Flour, barrel, standard patents, Minneapolis

1. Fuel oil, refinery, bbl., Oklahoma
*2. Fuel oil, refinery, tank cars, gal., Pennsylvania
*3. Gasoline, motor, gal., refinery, 58–60, Pennsylvania
*4. Gasoline, motor, gal., refinery, 58–60, N. Texas
5. Gasoline, motor, gal., refinery Oklahoma
6. Kerosene, refined, gal., water white, bulk, refinery
7. Rosin, "B" grade, yard basis, bbl.
8. Turpentine, Southern, gal.
9. Benzine, pure, tanks, gal., works
10. Borax, crystals, spot, lb.
11. Soda, caustic, 76% solid, 100 lbs., works
12. Sulphur (brimstone) stick, crude, gross ton, mines
13. Soda phosphate, commercial, lb.
14. Phosphate rock, Florida land pebble, 67%, ton, mines
15. Sulphate of ammonia, f. a. s., spot, 100 lbs.
3. Palm kernel oil, barrels, lb.
4. Palm oil, niger, casks, lb.
5. Camphor, refined, Japanese, slabs
6. Menthol, imported, cases, lb.
7. Sulphate of potash, 90–95% ton
8. Manure salts, 20% bulk, ton
9. Chloride of potash, 80–85%, ton
10. Nitrate of soda, 95%, 100 lbs.
11. Wood pulp, chemical, sulphite, unbleached, 100 lbs.
12. Wood pulp, Mitscherlich, unbleached, ordinary, ex-dock per 100 lbs. (*The Paper Trade Journal*)
13. Chicle in bond, bags, lb. (*Oil, Paint, and Drug Reporter*)
14. Dammar, Batavia, standard A/E cases, lb. (*Oil, Paint, and Drug Reporter*)
15. Chinawood oil, tanks, lb. (*Oil, Paint, and Drug Reporter*)
16. Quebracho extract, liquid, 35% tannin, bbls., lb. (*Oil, Paint, and Drug Reporter*)
17. Sodium cyanide, imported, cases, lb. (*Oil, Paint, and Drug Reporter*)
18. Creosote oil, grade II works, tanks, gal. (*Oil, Paint, and Drug Reporter*)
14. Pork, cured, mess, per barrel (200 lbs.)
15. Oleomargarine, standard, uncolored, lb., Chicago
16. Salt, American, medium, bbl., (280 lbs.), Chicago

B. Miscellaneous

(Not combined into a group index)

1. Timothy, No. 1, per ton, Chicago
2. Hay, alfalfa, No. 1, per short ton, Kansas City
3. Explosives, gelatin, 60%, lb. (*The Engineering News Record*)
4. Explosives, gelatin, 60%, lb., Chicago (*The Engineering News Record*)

C. Raw materials and goods used for further manufacture

1. Crushed stone, 1½ cu. in., per cu. yd.
2. Sand, building, cu. yd., delivered (along side dock, hence $1.00 per cu. yd. added, prior to April, 1928) (*The Engineering News Record*)
*3. Sand, building, cu. yd., delivered, Chicago (f.o.b., hence 30 c. per

TABLE I (Continued)

PRICE SERIES

(In the New York market unless otherwise indicated)

Export

A. Foodstuffs — Continued

*16. Cylinder oil, gal., filtered, av. price, Pennsylvania field
17. Lubricating oil, gal., neutral No. 3, refinery, average price, Pennsylvania
18. Laundry soap, 100 cakes, Cincinnati

C. Other raw materials

*1. Barley, fair to good, feeding, bushel, Chicago
2. Rye, cash, No. 2, bushel, Chicago
3. Wheat, cash, No. 2, hard winter, bushel, Kansas City
4. Wheat, cash, No. 2, red winter, bushel, Chicago
5. Cotton, middling, lb., Galveston
6. Cotton, middling, lb., New Orleans

Import

C. Other raw materials

1. Wool, Argentine, crossbreds, lb., straight quarter blood, grease basis, Boston
2. Wool, Australian, Geelong, 56's scoured basis, lb., Boston
*3. Wool, Montevideo, one-fourth blood, 50's, grease basis, Boston
*4. Wool, foreign, carpet, grease basis, in bond, scoured, China combing No. 1, lb., Boston (*The Textile World*)
*5. Wool, foreign, carpet, Scotch blackface, lb., Boston (*The Textile World*)
6. Copra, South Sea, in bags, lb.
7. Goat skins, Brazil's, first selection, Series II, lb.
8. Silk, raw, China, Canton double extra crack (A) lb.

Domestic

C. Raw materials and goods used for further manufacture — Continued

cu. yd. added prior to April, 1928). (*The Engineering News Record*)
*4. Cement, Portland, bbl., Chicago (*The Engineering News Record*)
*5. Cement, Portland, barrel, delivered by truck (f.o.b. prior to March, 1928 but no change in price) (*The Engineering News Record*)
6. Cement, Portland, per barrel, composite price (f.o.b. plant, average price 6 plants prior to January 1929)
*7. Common brick, domestic per M.
*8. Brick, common, building, per M, Chicago (*The Engineering News Record*)
9. Brick, building, plant, common,

*7. Cotton, middling, lb.
8. Hops, prime to choice, Pacific, lb., Portland, Ore.
9. Tobacco, leaf, average warehouse sales, 100 lbs., Kentucky
10. Leather, glazed kid, top grades, sq. ft., Boston
11. Leather, side, black, chrome tanned, "B" grade, Boston
*12. Leather, sole, union backs, steers tannery run
13. Copper, ingot, electrolytic, lb., refinery
14. Lead, pig, desilverized, lb.
15. Zinc, slab, pig, western, lb.
16. Lumber, Douglas fir, No. 1, common sheathing, 1000 ft. mills
17. Oak, plain, white, 4/4, No. 1, per 1000 ft., Cincinnati
18. Pine, yellow, flooring, 1000 ft., 1x4, B and better, F. G. sap, mills
*19. Pine, yellow, flooring, 1000 ft., 1x4, No. 2, F. G. Sap, Mills
*9. Silk, raw, China, steam filiature, 3d category, lb.
10. Silk, raw, Japanese double extra cracks (c), lb.
*11. Silk, raw, Japanese, double extra cracks, 13–15, lb.
12. Hemp, Manila, current shipment, lb.
13. Jute, raw, medium grades, lb.
14. Sisal, Mexican, current shipment, lb.
15. Nickel, ingot, spot, lb.
16. Tin, pig, spot, lb.
17. Rubber, crude, plantation, smoked, ribbed sheets, lb.
*18. Goat skins, dry, Patna, lb. (*Commerce Year Book*)
*19. Sheepskins, super, pickled, New Zealand, per doz. (*Commerce Year Book*)
*20. Hides, cattle, frigorificos, Buenos Aires, lb. (*Commerce Year Book*)
21. Cotton, long staple, Egyptian uppers, lb. (*The Textile World*), (7 composite price (f.o.b. average price 82 yards prior to January 1929)
10. Acid, sulphuric, 66°, Be., tank cars, per ton
11. Soda ash, light, 58%, 100 lbs., works
12. Asphalt, in packages (*The Engineering News Record*)
13. Gravel, building, per ton, plant, composite price (average 27 plants prior to January 1929)
14. Anthracite coal, chestnut, per gross ton, spot price for eight cities, f.o.b.
15. Bituminous coal, mine run, per gross ton, spot composite for eight cities, f.o.b.
16. Bituminous coal, prepared sizes, per gross ton, spot composite for eight cities, f.o.b.
*17. Coke, by-product, foundry, delivered, per net ton, Newark, N. J.

* Not utilized in computing the group index.
Source: The *Bulletins on Wholesale Prices of Commodities*, published monthly by the United States Bureau of Labor Statistics, unless otherwise indicated in parentheses.

TABLE I (Continued)

PRICE SERIES

(In the New York market unless otherwise indicated)

Export	Import	Domestic
D. Other Finished Manufactures	*C. Other raw materials* — Continued	
1. Drillings, Pepperell, 29 in., per yard, mill	cents per lb. added after July 1930, account of tariff)	*18. Pig iron, foundry No. 2, southern, per gross ton, Birmingham
2. Hosiery, women's silk, mercerized, mock seam, 220 needles, dozen pairs, mill	22. Crude petroleum, Mexico, f.o.b. terminals, Panuco, bbl. (*Oil, Paint and Drug Reporter*)	19. Petroleum, crude, bbl., Kansas-Oklahoma, wells
3. Print cloth, 64x60, 38½ inches, per yard, mill	*23. Crude petroleum, Mexico, f.o.b. terminals, Tuxpan, bbl. (*Oil, Paint, and Drug Reporter*)	20. Iron-ore, Mesabi, Bessemer, per gross ton, lower lake ports
4. Percale, scouts, 28½ inch, per yard, mill	24. Asbestos, crude No. 2, per short ton, f.o.b. mines, Quebec, taxes and bags incl. (*Engineering and Mining Journal*)	21. Iron-ore, Mesabi, Bessemer, per gross ton, lower lake ports.
5. Hosiery, women's silk, full fashioned, lisle top, heel, and toe, dozen pairs, mill	25. Manganese ore, per unit of Mn; Caucasian 52–55%, c.i.f., Phila. or Balt. (*The Iron Age*)	*22. Yarns, twisted, 40/2's, corded, weaving, lb., mill
6. Pipe, black steel, ¾ inch, 100 feet, Pittsburgh	26. Ferromanganese, foreign 80%, Atlantic and Gulf ports, duty paid (*The Iron Age*)	*23. Yarn, corded, single warp, 40/1 southern spinning, lb., mill
*7. Steel, merchant bars, 100 lbs., Pittsburgh		*24. Wool yarn, 2/32's crossbred stock, white, lb., mill
8. Rails, standard, gross ton, open hearth, mill		*25. Wool yarn, 2/50's, fine weaving, lb., mill
		*26. Wool yarn, 2/40's half blood, weaving, lb., mill
		*27. Steel billets, open hearth, per gross ton, Pittsburgh

*9. Steel sheets, box annealed, U. S. Standard No. 27, lb., mill
*10. Tin plate, coke domestic, base box 100 lbs., Pittsburgh
11. Plow, tractor, No. 5, Scotch Batt, each, factory
12. Tractor, 10–20 horsepower, each, factory
13. Buick, automobiles, passenger each, factory (composite after January 1928)
14. Chevrolet, automobiles, passenger, each, factory (composite after January 1928)
15. Ford, automobiles, passenger, each, factory (composite after January 1928)
16. Sewing machines, each, electric, factory
17. Automobile tires, each, cord, composite price, factory
27. Woodpulp, Kraft, standard Swedish, ex-dock per 100 lbs. (*The Paper Trade Journal*)
28. Woodpulp, bleached sulphite No. 1, ex-dock, per 100 lbs. (*The Paper Trade Journal*)

D. Other Finished Manufactures
(Not combined into a group index)
1. Silk, gray spun, imported, first quality, 200/2's lb.
2. Burlap, 40 inch, 10½ oz., yard
3. Shingles, 16 inches long, M, red cedar, mills
4. Glass, plate, polished, glazing, sq. ft., 3–5 sq. ft.
5. Glass, plate, polished, glazing, sq. ft., 5–10 sq. ft.
6. Paper, newsprint, rolls, contract, lb., mills
7. Mohair, woven, Turkey, fair average (*The Textile World*)

D. Other Finished Manufactures
1. Suitcases, composite price, each
2. Harness, composite price, per set
3. Travelling bags, composite price, each
4. Manufactured gas, 1000 cu. ft., composite price
5. Carpets, Axminster, per yard, factory
6. Bed room dressers and vanities, composite price, each, factory
7. Dining room chairs, composite price, each, factory
8. Tobacco, smoking, one ounce bags, per gross, composite price, factory
9. Living room chairs, composite price, each, factory
10. Kitchen refrigerators, composite price, each factory
11. Thread, 6-cord, 100 yards per spool, mill

* Not utilized in computing the group index.
Source: The *Bulletins on Wholesale Prices of Commodities*, published monthly by the United States Bureau of Labor Statistics, unless otherwise indicated in parentheses.

TABLE I (Continued)

PRICE SERIES

(In the New York market unless otherwise indicated)

Export	Import	Domestic
		D. Other Finished Manufactures — Con.
		12. Sewer pipe, 12 inch, standard, delivered, per foot, Chicago (*The Engineering News Record*)
		*13. Sewer pipe, 12 inch, delivered, per foot (f.o.b. prior to April 1928 but no change in prices), (*The Engineering News Record*)
		14. Hollow tile, building, per block, Chicago
		15. Wrapping paper, manila, No. 1, jute, 100 lbs.

* Not utilized in computing the group index.
Source: The *Bulletins on Wholesale Prices of Commodities*, published monthly by the United States Bureau of Labor Statistics, unless otherwise indicated in parentheses.

TABLE II

INDEX NUMBERS, MONTHLY, 1926-1930

(Rounded off to the nearest integer)

Month	EXPORT					IMPORT				DOMESTIC						International
	Foods	Chemicals	Raw materials	Finished manufactures	General	Foods	Chemicals	Raw materials	General	Foods	Raw materials	Finished manufactures	Chicago	New York	General	
1926																
January	101	99	110	104	104	101	106	111	108	106	99	101	104	102	103	106
February	100	99	108	103	103	101	103	110	106	102	100	101	102	101	102	104
March	100	98	100	103	100	98	100	105	102	101	99	101	101	101	101	101
April	100	99	99	102	100	97	100	101	100	104	98	100	101	102	101	100
May	100	100	99	101	100	99	99	99	99	100	99	100	100	101	100	99
June	103	101	98	100	101	101	100	96	98	97	100	100	100	98	99	99
July	103	100	99	100	101	102	100	97	99	91	100	100	96	96	97	100
August	100	103	98	100	100	98	100	95	97	92	100	100	97	97	98	99
September	100	103	97	99	100	98	102	98	99	96	101	99	99	98	99	99
October	100	100	96	99	98	100	100	96	99	99	101	99	99	99	99	98
November	97	98	94	97	96	101	100	95	98	102	103	99	98	100	99	97
December	95	97	95	96	96	101	99	94	97	102	102	99	99	101	99	97

TABLE II (Continued)
INDEX NUMBERS, MONTHLY, 1926-1930
(Rounded off to the nearest integer)

Month	EXPORT					IMPORT				DOMESTIC						International
	Foods	Chemicals	Raw materials	Finished manufactures	General	Foods	Chemicals	Raw materials	General	Foods	Raw materials	Finished manufactures	Chicago	New York	General	
1927																
January	94	96	95	95	95	101	99	93	97	100	101	98	99	102	99	96
February	93	95	94	96	94	100	100	95	97	97	99	98	97	100	98	96
March	93	92	95	95	93	101	102	95	98	94	98	98	96	99	96	95
April	91	90	92	96	91	98	100	95	97	95	96	98	98	99	97	94
May	92	88	94	96	92	99	100	94	96	94	96	98	98	97	96	93
June	92	87	96	97	92	98	100	93	96	92	97	98	98	93	94	94
July	92	87	97	97	92	98	99	94	96	88	97	98	97	91	93	94
August	92	87	101	98	94	100	99	95	96	89	97	98	99	91	94	95
September	92	86	107	100	94	100	98	95	97	93	97	99	99	92	96	95
October	93	85	100	99	94	104	99	94	97	95	97	99	98	93	96	95
November	93	84	99	98	92	105	96	93	96	98	97	98	97	93	95	94
December	89	84	103	97	93	103	96	95	97	98	97	98	97	94	95	95

1928																	
January	90	85	104	97	93	107	97	94	97	98	99	98	99	95	96	95	
February	89	85	103	97	93	107	96	93	96	96	99	98	101	93	96	95	
March	87	85	102	96	92	106	95	94	96	96	97	98	101	93	96	94	
April	88	86	104	96	94	105	96	92	96	93	100	98	101	95	97	95	
May	90	85	107	97	95	106	96	92	96	91	100	98	101	95	97	96	
June	90	84	101	96	93	105	95	91	95	86	100	101	100	92	95	94	
July	90	83	101	96	93	102	96	91	95	91	100	101	101	93	95	94	
August	89	83	98	96	92	98	96	90	95	88	101	101	101	95	96	94	
September	90	84	96	96	92	101	96	90	95	91	101	101	104	96	97	93	
October	89	84	100	97	93	101	98	89	95	90	101	99	100	95	96	94	
November	86	84	98	96	91	100	98	89	95	91	100	99	99	95	96	93	
December	84	83	104	96	92	101	98	89	95	92	101	99	99	96	96	93	
1929																	
January	84	83	106	96	92	100	98	91	95	91	102	98	103	96	97	94	
February	86	82	105	96	92	99	98	92	95	91	101	98	102	95	97	94	
March	85	82	107	97	92	99	97	92	95	85	100	98	102	93	96	93	
April	86	82	99	97	91	98	96	90	94	84	99	98	100	93	95	92	
May	85	82	95	96	90	97	96	88	93	86	99	98	98	93	94	91	
June	87	82	94	96	90	96	94	87	92	83	100	99	98	91	93	91	
July	90	81	97	95	91	97	95	88	92	93	100	99	105	93	96	92	
August	94	81	96	95	91	97	95	89	93	97	100	100	106	95	97	92	
September	94	81	94	95	91	97	94	89	93	98	99	100	105	95	98	92	
October	92	82	95	95	91	96	94	87	91	98	100	99	102	94	97	91	
November	92	81	89	94	89	93	94	83	89	100	100	99	100	94	96	89	
December	92	80	89	93	88	87	91	82	87	99	100	99	100	95	96	88	

TABLE II (Continued)

INDEX NUMBERS, MONTHLY, 1926-1930

(Rounded off to the nearest integer)

Month	EXPORT					IMPORT				DOMESTIC						International
	Foods	Chemicals	Raw materials	Finished manufactures	General	Foods	Chemicals	Raw materials	General	Foods	Raw materials	Finished manufactures	Chicago	New York	General	
1930																
January	91	80	87	92	87	85	90	81	85	96	99	99	101	95	96	86
February	91	79	84	91	86	85	89	77	83	94	99	100	98	93	94	84
March	90	78	81	90	84	85	88	75	82	89	98	100	96	92	92	83
April	90	78	79	88	83	84	87	75	81	92	98	99	96	92	92	82
May	88	76	76	87	82	82	86	72	79	88	98	100	93	90	91	80
June	86	74	73	86	79	81	84	69	76	85	97	99	92	87	89	78
July	84	73	73	85	77	77	82	66	73	79	97	99	89	85	87	75
August	83	70	71	83	75	73	81	65	72	82	98	99	93	85	88	74
September	83	70	68	82	75	69	80	63	70	85	99	98	93	87	89	72
October	84	70	66	83	74	71	79	60	69	84	98	98	89	87	87	71
November	81	69	66	82	73	69	79	58	67	82	97	99	87	86	86	70
December	77	68	66	81	71	66	78	57	66	79	96	95	84	85	84	68

THE STANDARD OF VALUE

SUMMARY

Introduction: doubts concerning stabilization of prices, 251. — Purchasing power reducible to labor, 254; with certain qualifications, 256. — The nature of monetary instability, 259. — Bad effects of it, 260. — True stability eliminates these, 263. — Basic labor standard superior to others in this respect, 265. — The debtor-creditor problem, 266. — No allowance for subjective side of labor, 267; or for changes in efficiency, 268. — The problem of detection, 269; of measurement, 274. — Practical considerations: production data alone an inadequate guide, 275; mild inflation easier to attain than stability, 277; corrective measures not always advisable, 279.

An uneasy suspicion persists that stability of the general level of prices may not be the true goal of currency regulation or reform. I do not refer to those who, like Sir Josiah Stamp,[1] hold that instability of prices, especially if moderate, may be harmless, but to those who believe that it may at times be *better* to permit prices to fluctuate. Tho never so vociferous as the advocates of price-level stabilization, these critics have not been absent at any stage. Until fairly recently, however, their doubts have been almost entirely concerned with the problem of justice between debtors and creditors. Why should creditors not share in the "gains of progress," instead of being repaid a "basket of goods" no greater than they turned over to the borrower originally, which is all they get when the prices of goods, instead of reflecting industrial improvements, are kept stable?[2] It is an argument that will be familiar to most readers.

Altho objections on this score have not been silenced,[3] there has been a tendency of late to pay more and more attention to another aspect of the matter. As the importance of monetary factors came to be stressed in explanations of the business cycle, and the stabilizationists began to make more of

1. Social Science Abstracts, January, 1931, p. 83.
2. Irving Fisher, The Purchasing Power of Money, pp. 221–222.
3. For example, F. A. Bradford in this Journal, xliii, 669.

this in their propaganda, it was natural that the precise nature of inflation should be more carefully inquired into, and that the old doubts about the "gains of progress" should be raised again in this connection. Is it not possible to argue that the normal effect of the steady march of technical improvement which characterizes modern industry would be a decline of the price level, were it not for unwarranted expansions of the currency? To use a phrase which is heard with increasing frequency, may not stable or even falling prices have "too much credit in them"? If this is the case, if inflation does lurk behind apparent stability, then attempts to keep prices from falling as well as from rising may, under certain conditions, foster the very thing they are designed to eliminate and do more harm than good.

It was, I think, considerations of this kind which led Professor Sprague to declare, in a paper read before the American Economic Association, that for successful stabilization we need an index which "measures general changes in unit money costs of production."[4] Mr. Hawtrey's opinion that it is better for the currency system to achieve stability of "consumers' outlay," that the ideal should be to keep the value of the monetary unit fixed "in terms of *human effort*,"[5] reflects the same dissatisfaction with the proposals of the stabilizers. More explicit than either of these, however, is the argument of Professor Reed in a note recently published in this Journal.[6] Citing the development of mass production and outstanding technological improvements as "powerful price-depressing forces," he declares flatly that prices have been "kept up only by the artificial encouragement of too much credit" and concludes that this played no small part in the unhealthy expansion which preceded the recent collapse.

4. American Economic Review, 1929, Supplement, p. 67. Professor Taussig pointed out in 1896 that the fall of prices then taking place was not so great a burden to business men or to debtors, under the circumstances, as had been claimed. QUARTERLY JOURNAL OF ECONOMICS, xi, 15–20.

5. Currency and Credit, 3d ed., p. 451.

6. February, 1931, p. 357.

These criticisms, it seems to me, cut too deep to be dismissed with no more discussion than they have so far received. The reason for this neglect is chiefly the vagueness of the theoretical position which underlies the attack. Not being based on any well formulated theory of pricing, it offers no satisfactory or even definite criterion of what the movement of prices ought to be in order to be free from the taint of inflation. It amounts to little more than a feeling of *malaise* — a feeble weapon against the enthusiasm of the stabilizers. Further analysis, moreover, appears to make it clear that such theoretical positions as may fairly be regarded as implicit in the arguments just referred to are themselves open to serious objections. In this paper, therefore, I propose to examine these questions anew from the standpoint of what I believe to be the correct theory of pricing, seeking to discover what inflation really is, how it can be detected, and what can be done, as a practical matter, to deal with it.

It should be noted, before we proceed to the main problem, that the objections to price stability advanced with respect to debtor-creditor relations are of a very different order from those arising from analysis of the business cycle. What a borrower ought to repay can not be decided by purely economic analysis. All we can do is to set forth the alternatives in their true light, in order that ethical principles may be intelligently applied. But the presence of inflation in a form likely to engender undesirable disturbances in the business world does not depend on our ideas of right and wrong; it is a question of the working of inherent forces which will produce their effects whether we like it or not. The latter problem seems much more deserving of attention. It is true that the price policy which would eliminate the inflation inimical to sound business might not meet the requirements of equity; but since debtors and creditors can make provision in their contracts against the effects of price developments, if they think it worth the trouble, whereas there is no way to protect business from the effects of inflation, it seems better to concentrate attention on the latter.

Purchasing Power and Pricing

Our problem, then, is this: is there an ultimate standard of value, a standard by comparison with which we can discover the really significant changes in the value of the money unit, the changes which bring unwanted disturbances into the round of business? I believe there is such a standard, and that it is not of so abstract a character as to be without practical usefulness. To establish the claims of this standard I shall endeavor to show, first, that it is implicit in the logic of the pricing process, and, second, that stability of the money unit in terms of this standard is the only price policy which would eliminate the business reactions ordinarily consequent upon inflation and deflation.

As a preliminary step we must clear up certain confusions which attach to the expression "measure of value." To apply this term to money clearly implies that the exchange-ratio between goods which money measures[7] or expresses is not only prior to money price, but is the fundamental element in the situation — that values are directly determined by the ultimate value-making forces. Now the second part of this proposition seems to me to be erroneous. Values — the ratios in which goods exchange for one another — are not, and can not be, directly determined. They are an inference from prices, not money prices but prices in terms of the basic purchasing power which would-be users of a commodity offer for a share of the existing supply. To perform their function of eliminating the weaker bidders (by arriving at a market price too high for them) these offers must be comparable, and to be comparable they must be expressed in a common medium. It is from prices in this medium that we learn the values of goods in terms of other goods. The use of money conceals the true nature of the process but does not alter it.

What is it that competitors really offer in markets? What is this common medium of the pricing process? It would seem that if we can discover the answer to this question, we

7. Objections to the inaccuracy of the term on this score have been raised more than once. Cf. B. M. Anderson, Social Value, pp. 26–27.

shall have the element to which the monetary unit must be tied in order to be stable — the true standard of value. The somewhat lengthy analysis required for this will be easier to follow if I first state my conclusion in summary form: *the standard of value is the most plentiful labor of the community, working without capital and in such a relation to the land supply that no land yields any rent.* It is evident that this statement refers to a given people and a given territory — a closed economy. I shall not attempt in the present paper to deal with its implications for the theory of inter-regional or international trade.

We may begin by recalling Adam Smith's dictum that "the real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it."[8] For the great majority of men this is only too true; all they have to offer for the things they want is the labor of their hands and brains. Whether a good is producible by labor or is the free (but scarce and appropriated) gift of nature, it is labor they must give in order to obtain it. They may pay out money when they buy, but the facts are clear enough. The man who earns five dollars a day needs no great subtlety to realize that when he pays five dollars for a hat his purchase is costing him a day's labor.

But an ever increasing number of men can not say that they buy with their labor. The purchasing power by means of which they satisfy their wants and with which they enter the markets of society comes to them without any effort on their part — as tribute from subjects, as income from investments, as the rent of land. In the first of these cases it is obvious that it is labor they are spending: the labor of other men, which the latter would have spent themselves if they had not been compelled to surrender it to the overlord who claims it. Only a transfer of purchasing power has occurred.

The other two cases — rent and interest — are less simple. We realize that the tenant surrenders a part of his produce, but we are apt to forget that this is tantamount to levying a tribute on him of so much of his labor. That is what the land-

8. Book I, ch. v.

lord has to spend, the purchasing power with which he buys of producers and competes with rivals for the choice and rare. It is not so easy nowadays to understand the nature of the landowner's income as it was in the days when the serf paid his dues — not all rent, perhaps, but largely so — by working a certain number of days on his lord's demesne.

Income from investments is reducible to labor in a different way. If the investments are of the efficiency-increasing type,[9] the investor's savings make possible an increase in the physical output of the laborers who use them. His contribution to production is therefore to be measured by the amount of labor which would have been required to produce this extra output by non-capitalistic methods, and the income which he has to spend — his power to command the production of the things he desires — may properly be regarded as the equivalent of that much labor. In the case of investments of the scarcity-reducing type the investor's income is simply the premium above the labor-cost of production which the consumers of certain goods are willing to pay for them. It must, therefore, be whatever they have to offer in the way of purchasing power — labor or its equivalent in the productive use of savings.

All purchasing power, then, may be thought of in terms of labor. But the purchasing power which the laborer and the landowner and the investor bring to a market must be a homogeneous mass; otherwise the offers of purchase which they make will not be comparable and the pricing process can not function. The labor in which different kinds of income are expressed *must be all alike*. This points to the reason for the first of the qualifications in the above formula— the specification that the labor used as the standard of value shall be the most plentiful type in the community. It is a commonplace that some kinds of labor are more valuable than others. To express one man's income in labor of the former sort and another's in the latter would certainly not give a correct idea of the relative amounts of purchasing

9. On the distinction between efficiency-increasing and scarcity-reducing investments see my Value and Income (1931), Chapter VIII.

power controlled by them. We must select some grade of labor and keep to that. This, it is true, leaves us with the problem of expressing some kinds of labor in terms of another, but that raises no logical difficulty. Since the price of the scarcer varieties of labor is derived from the price of the goods into which that labor enters, and since this price is determined in markets where consumers compete with one another by the offer of general purchasing power — necessarily their labor or its equivalent in productive power, as we have just seen — it follows that the wages of the more fortunate laborers are reducible to multiples of that labor which receives no wages premium — the most plentiful kind.[1] Analogous reasoning applies to the wages of laborers in occupations which men avoid because of some distasteful characteristic.

The reasons for the other qualifications in the above formula — that the standard labor shall be that of a rent-less and of a capital-less economy — are less obvious but equally compelling. The two may be considered together. With the thickening of population and the accumulation of savings the wage of the laborer will be reduced by the necessity of paying rent (or of resorting to poorer free land), and raised by his ability to capture a part of the increase in output which results from productive investment; while the incomes of landowners and investors will be increased or decreased by corresponding amounts. How compare the resulting income totals? What is the common factor in the larger wage of the laborer and the diminished earning power of investments, in the larger rent of the landowner and the lower earnings of the laborer?

We are so accustomed to seeing this comparison effected by means of money that we tend to take it for granted, but it is really no such simple matter. Fundamentally the only way it can be done is by reference to the preceding situation. It is only when we realize what the investor has lost or the laborer has gained that we see wherein their new incomes are

1. This does not imply that the wage premiums received by the more fortunate laborers are to be regarded as permanent as a matter of theory. Tho remarkably stable, they can, and do, change in the course of time.

comparable. What has been transferred from the investor to the laborer is a part of the productive power which his investment added to the capacity of the capital-less laborers, and which, as we have seen, is logically expressible in terms of their labor.[2] It is this — the whole of it — which constituted his income. Incomes in the rent-paying economy, tho not explainable by such a transfer of productive power, are likewise to be interpreted in terms of the pre-existing situation. The plight of the rent-paying laborer — compelled, in effect, to surrender a part of his labor power — is no different from that of the occupant of no-rent land. The buyer who offers labor under conditions which render him ten per cent less effective as a producer is on a par with the one who works under better conditions but must give ten per cent of his time to a landlord. Both, therefore, may be regarded as controlling so much less purchasing power. And since the rent of the landowner is also reckoned in this, as we have seen, the incomes of all classes under the new conditions are made comparable.

A more obvious reason for rejecting labor "as is" in our formula, and insisting upon the qualifications now under consideration, is the impossibility of using the standard of value for historical comparisons unless we thus define it. A price of ten days' labor from a man using good land and paying no rent is not the same thing as ten days' labor from a man using poorer land or paying rent. Neither he nor the recipient can be supposed to attach as much importance to it.[3] Nor is a day's labor from a man working with capital, and enjoying some share in the extra productivity which it makes possible, the same as a day's labor from a man who does not enjoy this advantage. It is not only common labor, therefore, which must be taken as a standard, but also rent-less, capital-less labor. This we may call "basic labor."

2. In the case of scarcity-reducing investments, of course, there can be no question of additional productive power. It is simply the premium (in labor) above labor-cost of production that is involved. Cf. p. 256 above.

3. The recipient must also be supposed to be in more favorable circumstances, himself, in a competitive society where incomes are as nearly equalized as may be.

The Nature and Effects of Inflation

What would be the behavior of prices if money played no rôle in the economic system, if prices were not only made but expressed in this basic purchasing power?[4] As now, temporary plenty or scarcity might drive the prices of some things down, the prices of others up. Buyers willing to give but little of their purchasing power must be enlisted in the one case, excluded in the other, in order to clear the markets. Long-run deeper-seated causes work in the same varied way. If it becomes necessary to resort to poorer natural resources for the production of certain goods, these will sell for more labor than formerly, as a normal thing; while goods in the production of which less labor is required will bear a proportionately lower price. No good can regularly sell for more labor than goes into it, if anyone can make it who wishes to; and if it is the product of a scarce kind of labor, its price will fall when less of that labor is needed to produce a unit of it. In like manner, changes in the relative scarcity of the limiting factors — special kinds of labor, savings for use as an ingredient — which restrict the production of certain goods will be reflected in changes in the prices (i.e., amounts of basic labor) which these goods command.[5]

The changes arising from these various causes over a given period of time may offset each other, leaving the general average of prices unchanged, but such a result seems improbable. There is nothing in the nature of the factors at work to justify our expecting them to conform to a kind of law of probability and distribute themselves impartially on either side of the balance. It is rather more reasonable to look for trends of greater or less duration in the general average of prices, first in one direction, then in the other, as the spirit of invention and enterprise or the crowding and exhaustion of natural resources dominate the picture. However this may be, change rather than stability will be the rule.

4. In the remainder of this paper the expressions "basic prices" and "money prices" will be used whenever the context does not make obvious which is meant.

5. For a fuller statement of the theory of value which underlies this paragraph, I venture to refer again to my Value and Income, especially Chapters III, V, and VIII.

Suppose, now, that money is introduced, a unit of money for every unit of purchasing power, in terms of basic labor, in the hands of the people.[6] If the supply of money is so regulated as to keep exact pace with changes in the amount of purchasing power, so that a unit of money continues to represent a unit of basic labor, it is evident that money prices, individually and as a whole, will behave just as basic prices would have done, under the existing conditions, in the absence of money. Nothing has occurred, in effect, except a change of name. If the money unit, however, does not maintain the initial ratio to purchasing power, the movement of prices will not be the same as it would have been otherwise. If a unit of money comes to be the equivalent of *less* basic labor, money prices will either rise more or fall less; the former when cost-raising forces are at work, the latter in the contrary case. A *rise* in the basic labor equivalent, on the other hand, will cause money prices to rise less or fall more. This fluctuation in the amount of ultimate purchasing power — the true standard of value — for which a unit of money stands is what really constitutes monetary instability. It is not simply a question of the purchasing power of money in terms of goods.

We must now turn to the second part of the case for the basic labor standard — that the stabilizing of money in terms of it will eliminate the harm inflicted upon business by inflation and deflation, and that no other kind of stabilization will. We can best approach the question by considering briefly what these evils are. As we all know, they are not due to the fact that all transactions come to be carried on at a new level of prices with more or fewer "counters." For the business man's buying and selling, planning and experimenting, as for the community's producing and consuming, one price level is as good as another. The trouble arises from the gradual process by which an excessive addition to, or subtraction from, the money supply spreads its effects through the economic system. For it is generally such changes that

6. Ignoring, for the sake of simplicity, the question of currency turnover. This does not affect the reasoning which follows.

breed inflation and deflation.[7] One does not need to subscribe to any rigid form of the quantity theory to accept this proposition. It is enough to agree that the value of money may be affected in some degree by changes in the supply of it.

The first impact of additional monetary supplies, not offset by a corresponding increase in production, is upon the money prices of goods; at first certain classes of goods, depending on who controls the new purchasing power,[8] and later, as it becomes diffused through the population, goods in general. If producers dealt directly with the consumers of their products, their money incomes would reflect the rise of prices as rapidly as the change spread from commodity to commodity, and it would be only during the interval required for this spread that there would be danger of maladjustments in production. Where production is organized by entrepreneurs, however, the adjustment is much slower. Even if there is no unemployment and no idle land or savings, the upward movement of incomes is delayed until the entrepreneurs are stimulated by their greater profits to seek additional productive resources in order to expand their operations. Where there are idle resources — which is almost always the case at the beginning of such inflationary movements — these new activities of the entrepreneurs bring no increase in the remuneration of the productive factors. The conventional character of many such payments, especially wages and rents, reënforces this tendency. There is a lag between money incomes, except those of entrepreneurs, and the movement of prices.

This lag has two undesirable effects upon business: it accentuates the tendency to a misapplication of productive resources, requiring more or less difficult readjustment later; and it engenders a deficiency in the buying power of con-

7. Changes in the rate of turnover may also affect the value of money, and there may be short-run problems where this is to be regarded as an important factor.

8. Since new purchasing power is nowadays likely to be in the form of bank credit, it is the entrepreneur class who have the first spending of it, and the goods they want — largely capital goods and raw materials — tend to be the first to show a rise in price.

sumers, which makes markets unable to absorb even their normal volume of goods. The first results from the rôle of profits in the guidance of industry. Those branches of industry which experience the greatest rise of prices[9] will enjoy abnormally high profits, not only during the first flush of new spending, but as long as the lag in wages and rents keeps down their expenses. They will appear to be the most promising fields for expansion, that which is only a flare-up of demand being interpreted as a permanent shift in their favor. If entrepreneurs act upon this interpretation — and there is danger that some of them will — they will presently find themselves in difficulty; for there is nothing in the underlying demand situation, whether consumers' demand or savers' demand, to justify any such transfer of resources to these lines, and the facts will become clear as soon as the diffusion of the new purchasing power begins to be reflected in the mass of incomes. It is this distortion of the industrial structure which is the principal bad effect of inflation, not any general impetus to expansion. What harm can there be in expansion which puts all the unemployed to work, if they are producing the right things?

Less serious is the reduction of purchasing power encountered by certain markets. As the effects of inflation spread, the producers of certain articles of general consumption find themselves constrained to try to raise their prices. Their expenses having risen — especially for raw materials, perhaps also for certain kinds of labor not readily recruited from the general body of workers — they must charge more or lose money. The consumers of their products, however, having received no increase of income, or not a commensurate one, are unable to buy as much at these higher prices as before, and as much as they will be able to buy when their incomes have been readjusted.

This brief summary of pretty familiar ideas is enough to enable us to test the basic labor standard from the point of

9. Those which depend upon the demand of wage-earners primarily, and perhaps some others, will be but little affected for a time.

view of business stability.[1] A monetary policy designed to keep the value of money stable in terms of this standard might, of course, entail changes in the volume of currency. Increases and decreases would be called for as the amount of purchasing power — in basic labor or its equivalent in productive power — in the community varied, as a result of changes in the size of the working population, in the amount of labor performed per capita, and in the increase in their productivity effected by the investment of savings. Would these changes in the supply of money give rise to the disturbances just outlined?

Let us first consider the case where an increase in the supply of money is accompanied by an increase in basic prices. This will occur when certain goods have to be produced with the aid of poorer natural resources, either because the population has grown or because the better resources formerly used have been depleted, destroyed by catastrophe, or perhaps lost to invaders.[2] There is nothing here to give rise to the discrepancy between selling price and expenses of production which causes the trouble. Since real wages are due to fall under the circumstances, there can be no question of a failure of money wages to rise as fast as money prices. The prices of the goods in question will indeed rise as the currency supply expands, but all the entrepreneur's additional receipts will be required to pay his higher expenses for labor or to pay the higher rents which landowners can now command.[3]

Not all the expansions of currency required to keep the value of money constant in terms of basic labor will be paralleled by rising money prices. They are quite as likely to be called for by an increase of output resulting from productive investment, and in such cases prices will not rise at all. No

1. I do not mean to imply that it suggests all the factors responsible for the business cycle. It does not even cover all the monetary ones.

2. In this second group of cases the price rise may not be accompanied by an increase in the currency. An increase occurs only when the people work longer hours in an attempt to offset some of the loss they have suffered, thus increasing the volume of basic labor acting as purchasing power and requiring monetary representation.

3. There may, it is true, be some lag in the rise of rents, these being often fixed for long periods.

more labor is required to produce any good, and none, therefore, can be expected to sell for more as a result of the increase in investment.[4] The money added to the circulation, instead of sustaining a rise in money prices, as in the above case, simply goes to finance the payment of interest, or interest and such increases of wages (real wages) as may result from the greater investment. The entrepreneur's receipts per unit of product do not increase and his expenses do not decline.[5] Profits are not affected.

Nor is there danger that the bad effects we associate with deflation will result when a contraction of the currency is needed in order to maintain the stability of money in terms of basic labor — highly improbable in healthy economic societies, but possible in declining ones. This conclusion rests on reasoning so similar to the foregoing that it is hardly worth while to go into it further. There is, however, another case apparently threatening deflation about which a few words seem advisable. According to the basic labor standard there is no need for an expansion of the currency to parallel an increased output of goods when this increase is due to greater efficiency of labor.[6] There is no more such labor to be represented by money. The result, therefore, is a fall in money prices. Will not this have the depressing effect upon business that deflationary price changes do? I see no reason why it should. The receipts of the entrepreneur per unit of output are falling, it is true, but so are his expenses for labor, since less labor is required with the more efficient methods and the price of labor is unchanged.

The foregoing argument, it should be noted, applies only

4. Some may even become cheaper, if investment increases enough. This will be offset, however, in a properly weighted average of prices, by the fact that other things become dearer in consequence.

5. Where an increase in wages is called for by the underlying relationships, it might seem that a lag in money wages would work to the advantage of the entrepreneur. This is not so, however, because a lag in the fall of interest will occur at the same time, thus keeping up total expenses. It is rising wages, indeed, that force down interest.

6. This refers, of course, to changes in the skill, organization, etc., of the labor itself, not to changes in the equipment or natural resources at its disposal.

to a currency policy designed to *maintain* the value of money unchanged, not to one which undertakes to *restore* it after it has deviated from some chosen norm. Once a new value of money has become reflected in the income structure of the community, any raising or lowering of it, whatever the background or motive, will be disturbing to business. If the redundancy or scarcity of currency has had time to affect only the price structure, attempts to apply corrective measures may be less objectionable, perhaps even beneficial.

One point remains for discussion before we leave this aspect of the problem. Is the basic labor standard the only one in which money can be stabilized without leaving business exposed to some measure of disturbing inflation or deflation, the only one under which prices will never "have too much credit in them"? It will be sufficient to consider the two principal alternative standards — the commodity standard and the labor standard.

Stabilization according to the first of these means that money prices will not be allowed to drop when labor becomes more efficient. This buoying up of prices in the face of an increased output of goods, it is evident, requires an addition to the money supply. The first effect of this will be to widen the spread between the entrepreneur's expenses and his receipts. Selling in a market where price per unit has not fallen, he has to pay out less for labor, less of it being now required and its price (money wages) having not yet risen as it eventually must if money prices are kept stable in the face of greater output per unit of labor. Inflation, then, is not always eliminated by keeping the purchasing power of money stable in terms of commodities.

The other standard is equally defective. Stabilizing money in terms of labor — not basic labor, be it noted — means keeping the money rate of wages unchanged, whatever the ups and downs of laborers' real incomes. Now under some conditions this policy will lead to deflation. When money wages are thus fixed, no allowance is made by the monetary system for increases in output resulting from a greater use of productive capital, so far as this expansion of investment

redounds to the advantage of the workers.[7] Such a failure to increase the supply of money in proportion to the volume of goods being offered for sale can not but tend to depress general prices. This deflation will react unfavorably upon business through its effect upon entrepreneur incomes. There is here, of course, no question of lagging money wages — by hypothesis the money supply is sufficient to keep them from falling — and hence no threat to profits from this usual source; but other payments which the entrepreneur has to make are likely to be slow to come down to the level which must in time prevail. Rents, which must fall with commodity prices, being unchanged in terms of real income, are often rendered sluggish by custom or the nature of the contracts for paying them; and the downward movement of interest payments, tho more responsive to new conditions, may often have to wait on the revision of long-term agreements. Over short periods the amount of deflation involved in the labor standard would ordinarily not be very great, since the rise of real wages resulting from increased investment is rather slow and hence there would be no great addition to output unmatched by new purchasing power. But over considerable periods of time the difficulty may become serious.[8]

The basic labor standard, then, appears to be superior to both the commodity standard and the labor standard, so far as business stability is concerned. But what about the debtor-creditor problem? These classes, as I have already said, can contract out of such inequities as they believe to be involved in an existing monetary standard or price policy by agreeing to make repayment depend upon some more satisfactory criterion; but such possibilities are so commonly neglected because of unfamiliarity or inability to agree, that the case for or against a given monetary standard should not be regarded as complete until the long-term lender and borrower have been given a hearing.

7. It does not necessarily do so — not unless it forces a drop in the rate of interest.

8. Over short periods, moreover, there is greater probability that a price decline may be prevented in some measure by increased velocity of circulation.

The lender, it is evident, is treated more generously by stabilization in terms of basic labor than by stabilization in terms of commodities, and less generously than by assuring him repayment of a fixed amount of labor or its equivalent. He shares in the "gains of progress," so far as these are due to greater efficiency of labor or to greater plenty of savings for use as an ingredient, since money prices fall under these conditions, when the money unit represents the same amount of basic labor,[9] and he is repaid as many of these money units as he loaned. He does not, however, benefit by the increased earning power of labor resulting from increased investment, as he would do if the money unit would always purchase the same amount of labor. This, as we have just seen, may entail some decline of money prices, and he would derive advantage from that. A compromise is thus effected between the claims of two opposed groups — those who would have the lender share in all gains arising from industrial advance and those who hold that he should not have a share in any of them.

The experienced reader has probably noted two significant omissions in my formula for the standard of value: there is no reference to the subjective side of labor, and no allowance is made for changes in the efficiency of labor. The first of these factors has nothing to do with labor's function as a "pricer." It has an important influence upon the *supply* of basic purchasing power, i.e., upon the amount of work men are willing to do, but there its rôle ceases. Whether a day's labor costs the laborer much or little in the way of fatigue and satisfactions foregone, it counts the same as any other day (of like grade) in a general market, for it means the same control over goods — the same productive capacity — to the recipient. Why, then, are we not justified in treating two such days as the same thing when we encounter them at different periods? Objectively they are the same, and that is what matters. It is true that the trend of prices does not tell us all that is significant, when we ignore the costs of the labor in which they are expressed, but every other standard of value

9. Cf. pp. 259, 264 above.

is silent on these things too, for they can not be measured.

Nor does the logic of the pricing process require us to take account of changes in efficiency. The comparing of incomes, tho impossible, as we have seen, without reference to an antecedent rent-less and capital-less economy, is entirely feasible without treating the laborer of a more efficient era as the possessor of more units of purchasing power. If only a part of the laborers benefited by the change, it would indeed be necessary to make this assumption, in order to compare one price (i.e., labor) offer with another in competitive markets. A day from the more efficient worker would mean more, as in the case of any other favored group.[1] But if anyone who is otherwise able to enter the occupation affected can adopt the new technique, the benefits of it will be shared eventually by everyone in the community. Competition will bring down the cost of the product to everyone and everyone, accordingly, will have more purchasing power left to spend on other things.[2] All are therefore in the same relative position as before; no new problems of comparison have been raised.

This reasoning, of course, only tells us that it is unnecessary to make allowance for changes in efficiency, not that it should not be done. There are two objections to doing it. The first is that price statistics would be rendered less *directly* significant than under the standard I am advocating, would tell us less — both in detail and in the mass — about the progress of man's age-long struggle to wrest a living from his environment. To take a simple example, let us suppose that in a "labor economy" the workers in all occupations double their efficiency — produce twice as many goods in a given time. According to the basic labor standard this great gain in economic well-being would be plainly reflected in prices, which would fall to one-half their former level. If, however, a day's labor, since twice as efficient, were counted as twice as much purchasing power, prices would not fall at all. The half day paid for what formerly cost a day would be quite as

1. Cf. p. 257 above.

2. During the interval before competition has effected the reduction of cost to the consumer, producers using the new methods may be said to constitute a temporary special group.

high a price as ever when each day was treated as twice as many units of purchasing power. Prices would reveal nothing of the revolutionary changes in production until "corrected" to allow for the "inflation" of the standard.

It may be conceded that this objection is not a very serious one, and that it certainly should not prevail against demonstrable good effects upon business. No such effects are to be expected, however; if anything, the advantage is the other way, and therein lies the second of the objections just mentioned. To stabilize money in terms of labor of some given degree of efficiency would be disturbing to business, not helpful. The price policy which it involves — keeping money prices stable when efficiency increases — has already been shown to be attended by the evils of inflation.[3] The expansion of currency required would temporarily raise the profits of entrepreneurs and stimulate some of them to uncalled-for increase of facilities.

The Problem of Detection and Measurement

The argument developed above leads to the conclusion that we can not depend upon the general level of money prices to reveal all significant changes in the value of money — that inflation or deflation may be concealed in stable prices. This means that we must seek another indicator of such changes or abandon the hope of devising a really satisfactory policy of credit control. The problem has a qualitative and a quantitative aspect. The first is concerned with the *presence* of inflation, the second with the *amount* of the change. Under some circumstances there is no technique of detection except measurement — the two aspects are one, for practical purposes — but it is not always so, and it will be worth while to consider the possibilities of detection separately.

The fluctuations of prices which are possible when the value of money remains stable in terms of basic labor are the result of certain industrial conditions and of these alone. Any change of prices which occurs in the absence of these condi-

3. Page 265 above.

tions, or any failure to move in the direction indicated by such of them as are known to be present, must therefore be interpreted as due to causes acting upon money itself: inflationary if prices rise without cause or do not fall when they should; deflationary if prices fall without cause or do not rise when they should. These price-disturbing conditions have been referred to or hinted at in connection with various points in the preceding discussion, but they have not been brought together in the systematic form required for our present purpose.

First, the conditions which make a fall of money prices the thing to be expected. These are (1) increased efficiency of labor, (2) greater relative plenty of investment funds, (3) decreased pressure on the community's natural resources, and (4) temporary exceptional yields in agriculture and allied industries. If labor becomes more efficient anywhere in industry, the prices of the commodities affected will fall; less basic labor is required to buy these things, and a unit of money represents the same amount of this labor as before. The average of prices will fall too, since there is nothing in these developments to cause any offsetting price rises in the case of other goods. This increase in efficiency, it is important to note, *is not merely a question of greater output per unit of labor*. It must have been achieved without the aid of capital, i.e., without any increase in the community's per capita investment in machinery and other aids to industrial productivity or any improvements whereby the same amount of investment is made to add more to the output of labor, thus raising the rate of interest. Increases in output due to the latter causes mean, as we have seen, an increase in purchasing power in terms of basic labor, not a change in the terms upon which the possessors of such labor or its equivalent obtain goods in general.[4]

This does not mean, however, that a decline of money prices is never to be expected when the increased productivity of labor appears to be due to an extension of investment. The

4. Cf. pp. 263, 264 above. As there pointed out, some goods may fall in price, but there will be compensating rises in the case of certain others.

increase in the supply of savings which makes this extension possible is itself a price-reducing factor after a certain point. This is not, as might be supposed at first blush, inconsistent with what has just been said about the effect of machine production. We have to do here with an entirely different use of savings — not increasing the amount of certain things which a given number of laborers can produce, but making possible the production of those things, notably durable consumers' goods, for which the use of savings is required as an indispensable "ingredient." When the supply of savings becomes great enough these things can be produced in greater abundance and will be cheaper, will command less basic purchasing power, while other goods are not made dearer. This is not simply a question of an increase in savings; the supply of funds seeking investment must be *relatively* greater than before, i.e. the increase must not be offset by the discovery of new opportunities for the use of such funds. In other words, the rate of interest must fall.[5]

The third of the conditions stated above — decreased pressure on available natural resources — is less likely than the others to play an important part in contemporary societies, but it is not altogether negligible. It may arise from a decline of population, from a shift of taste toward non-land-using products, such as personal service, or toward products requiring less land for their production, as from meat to cereals, from decreased use of land for direct consumption, or from technical improvements in the use of land not offset by increase of numbers. However caused, such a relaxation of pressure results in a fall in the amount of basic labor required to produce a unit of certain goods (at the margin) and hence a lower price in money which is stable in that labor. Evidence that such price-depressing conditions are present is again afforded by an increase in the physical output of industry as

5. Technical improvements making it possible to produce these goods with less savings per unit will also result in lower prices, even tho the rate of interest does not fall. Probably this may be ignored in most cases without much danger of concealing a significant degree of inflation.

a whole[6] per unit of labor employed with no increase in the investment per worker or in the rate of interest. The effect of bumper crops is similar to the foregoing — while they last.

These, then, are the conditions under which a fall in general prices is to be expected, when money is stable in terms of basic labor: (1) greater output per unit of labor with no increase in the amount of capital equipment per worker and no rise in the rate of interest or (2) such an increase in output accompanied by increased investment and a fall in the rate of interest. If prices do not decline when these conditions exist, something is lowering the value of money in terms of the standard — prices are inflated; if they decline without these conditions, deflation has occurred.

The conditions leading to a rise in money prices are just the opposite of those considered in the foregoing paragraphs, but their relative importance is likely to be very different. Scarcity of natural resources is the chief price-raising factor in most cases. Unless offset by improved methods of utilization, the increase of population which still characterizes most societies will force the use of poorer land, and the depletion which some resources almost inevitably suffer in the course of time tends to make matters worse. As in the contrary case, the change will be reflected by the productivity of labor, i.e. by diminished output of industry with no decline of investment to explain it. Temporary shortages work in the same way.

That greater relative scarcity of savings or a decline in the efficiency of labor will also raise money prices is sufficiently obvious after what has been said concerning the price-depressing aspect of the opposite conditions. Tho neither is likely to play so large a part in upward movements of prices, they can not be passed over altogether. The former may arise not only as a result of a decline of thrift but also from the wastage of war, the opening up of new investment channels at home or abroad, changes in demand in favor of

6. Still assuming, of course, that there has been no change in the opposite direction elsewhere in industry — the only condition under which the average of prices will decline.

machine-made products, and so on. A change for the worse in the efficiency of labor is not unthinkable, especially over a long period of time.

An increase in general prices, then, is to be regarded as normal, under the basic labor standard, (1) when the output of industry declines per unit of labor applied, with no falling-off in the amount of equipment available, (2) when the rate of interest rises, whether as a result of decreased investment or not. Failure of prices to move upward under these circumstances is to be interpreted as deflation; a rise in their absence as inflation.

Now it is evident that these price-raising and price-depressing factors are not all mutually exclusive, that increased efficiency of labor, for example, may be achieved during a period when the supply of savings or of natural resources is becoming relatively less plentiful. How combine the conflicting elements? So far as they reveal themselves in correlated changes in the output of industry, this raises no difficulty. The statistics of output will show where the balance between them lies and what the trend of prices ought to be. A rise in the interest rate, however, tho always causing higher prices, while money remains stable in terms of basic labor, does not always bring a reduction of productivity. When due to improvements which increase the yield of capitalistic investments, it works just the other way.

Even if we waive this last point as relatively unimportant, a serious difficulty of interpretation remains. On the basis of the considerations outlined above we can tell, at best, only whether prices should be rising or falling, assuming money stable, not how great the change ought to be. In some cases it would be fairly obvious whether the movement of prices was of the correct order of magnitude, at any rate, but in others not even this would be clear. It could hardly be expected, for example, that a fifty per cent increase in output per unit of labor, all caused by greater efficiency or reduced pressure on the land supply, would bring about only a ten per cent fall in prices.[7] An increase in output accompanied by

7. It need not, of course, be exactly proportional to the change in output. Agricultural prices, being determined in the long run by marginal output, fall faster than average output rises.

increased investment and a lower rate of interest is another story. Is all the increase due to the added investment, leaving only lower interest, working through the prices of certain classes of goods, to affect the price level; or is some of the increase due to greater efficiency? Perhaps we could estimate whether the increase in output was greater than could reasonably be attributed to the increase of capital, but even then we should be somewhat in the dark as to what the behavior of prices ought to be. An instrument of measurement is needed.

It must be admitted that the problem of measurement presents many difficulties. Two methods of approach suggest themselves, (1) analysis of wage data, and (2) analysis of price data. Since it is variations of money in terms of basic labor that we are trying to discover, it would seem natural to examine the course of the price of basic labor itself. On the other hand, since it is a question of the adequacy of price changes, it ought to be helpful to examine the working of the price-disturbing factors in the case of particular commodities.

The first method, it is hardly necessary to point out, can not be used directly in most cases. There is no wage-rate, even that of the simplest unskilled labor, which can today be regarded as the price of basic labor. All wages reflect in some measure the depressing effect of land scarcity or the beneficial effect of productive investment. As we have seen, however, these changes in wages are expressible in terms of basic labor.[8] Changes in money wages should therefore parallel wage movements as thus understood. Hence if we could compute the degree of change in real wages to be expected in the light of known variations in the determining factors, a comparison of this figure with the index of money wages would show whether money had appreciated or depreciated and how much. Under otherwise stable conditions we might hope to obtain an approximation of this by assuming that the laborers' gains or losses would be equal to the losses or gains of investors and landowners as computed from data for total investment, average interest rate, and land rents (if we had these figures!); but under dynamic conditions there

8. Cf. p. 257 above.

would be such a large margin of error in the results that the effort would not be worth while. I shall, therefore, not weary the reader with further discussion of the method suggested.

The method of price analysis offers little more hope. Where there was reason to believe that labor was increasing in efficiency, it ought to be possible to discover which of the commodities used in computing the index number had been most affected and how large a drop in their prices was to be expected in the light of conditions of production.[9] In the same way an estimate might be reached of the probable effect of the other price-making factors on the index-number commodities, and from these various clues we could obtain some idea of what the behavior of prices ought to be if money remained stable. Even for short periods the results might not justify the labor required; for long periods the task would be impossibly laborious. We shall probably never be able to write the story of the fluctuations of money in terms of the true standard of value.

Practical Considerations

These discouraging conclusions with regard to the problem of measurement do not mean that the doctrine of the basic labor standard, even if sound, has no practical usefulness. On the contrary, it affords support for some phases of accepted banking policy and raises a defense against certain proposals which, if uncritically adopted, would probably be harmful.

The practical value of a theory of this kind depends on the assistance it affords in preventing inflationary and deflationary disturbances, and in dealing with such conditions when they have arisen through neglect or mistakes of judgment. So far as the first of these aspects is concerned, the reasoning set forth above clearly points to the inadequacy of production data by themselves as a guide to policy. A change in the index of physical production may or may not call for a proportionate change in the supply of means of payment. It depends on how the change was brought about. Where a

9. The full possible drop might not come for years, of course, owing to the slowness with which competition becomes effective.

rise, for example, is the result of an increase in the amount of labor engaged in industry,[1] or the use of relatively more capital, such an addition to the currency is required in order to prevent deflation. There is more basic labor or its equivalent in productive power in the community. Money prices should be kept up. But so far as the increase is due to greater efficiency of labor, no more currency is required — a price-sustaining policy would be inflationary; and so far as the increase of investment has resulted in a lower rate of interest, a less liberal policy is advisable — expansion but not enough to keep prices absolutely stable. Similarly for declines in the production index.[2]

Stability of the production index, on the other hand, does not necessarily indicate that no change in the supply of currency is needed. If the volume of output has been sustained despite a falling off in the amount of labor applied to production, the result may be due to greater efficiency of labor, to the use of more capital, or to more effective use of what capital there is. In the first case a contraction of the currency is needed to prevent inflation; prices should be allowed to fall. In the other two cases, however, such contraction would be deflationary; the decline in the volume of basic labor has been just offset by the increase of its equivalent in productive power, leaving the need for currency as great as ever.[3]

This linking of the currency with the consequences of investment should not be confused with expansions of bank credit for the purpose of financing the investment process itself. In the latter case the expansion of the currency must in the nature of the case *precede* the increase in output — i.e. the increase in basic purchasing power — by months or even years. Its first effect is merely to divert productive capacity

1. This is not simply a question of the number of employed. Account must also be taken of the amount of time each worker puts in.

2. Apart from changes in business practice affecting the turnover of goods, the cases admitted here are the only changes in the "needs of trade" for which the banking system ought to make provision. The others are likely to prove, upon analysis, to derive from speculative operations or the desire to use bank credit as a substitute for savings.

3. Perhaps a little greater, if the rate of interest has risen, for then the price level should rise somewhat.

from the making of consumers' goods to the construction of producers' goods. Inflation will therefore ensue. The increase of output which eventually results will, it is true, require more currency, in order to keep the value of money stable, but it is highly improbable that this addition will need to be as great as the one which has already occurred, and in any event a preliminary period of inflation is inevitable. Moreover, since deflation is always unwelcome to the business world, there is every prospect that when the increase of output finally appears it will be made the basis of further, and successful, demands for credit. The value of money will be permanently affected.[4] The kind of currency expansion advocated here, however, does not come until it is needed. The previous fact of investment is treated as evidence of the present need for means of payment. This is what justifies the use of bank credit for a part — perhaps a substantial part — of the "working capital" of business.[5]

Our reasoning thus far has assumed that, since all inflationary or deflationary changes are disturbing to business, it is desirable to eliminate them as far as possible. The harm threatened, of course, would vary with the extent of the change in the value of money, and might be so slight as not to be a matter of concern. There are, moreover, not a few economists who believe that a moderate degree of inflation may be not only harmless but even mildly beneficial. It is therefore of some interest to note that it is easier to apply the basic labor standard, in most cases, when something less than complete stability is made the goal of monetary policy. In most societies which have attained the complexity of having a "managed currency," increased efficiency of labor is likely to exert recurrent influence upon the price situation, but it is

4. If the population is growing fast enough, this additional need for currency may offset the expansion of the currency for investment purposes and the inflation may be slight and temporary. This is only a coincidence, however, and the fact that the policy has worked fairly well over a given period can not be taken as proof that it always will.

5. It must be evident from the above discussion that the price men are willing to pay to obtain loans is not an accurate indication of the community's need for bank credit. Lack of space forbids my dealing with this aspect of the matter.

often difficult to measure because combined with capital growth which affects industrial output in the same way. A fall in the rate of interest, moreover, tho perhaps not so difficult to determine,[6] is hard to make allowance for. Now since both these factors tend to depress prices, we get inflation by ignoring them. Where they appear to be relatively weak elements in the situation, therefore, a slight degree of inflation will result if we treat all increases in output as justification for additions to the currency and keep money prices stable.

Something like this state of affairs is likely to be found in the great majority of cases. The rate of interest, as is well known, has remained remarkably stable in the face of great additions to the investment fund — thanks to wars, inventions, and population growth — and promises to remain so[7]; and the striking gains in the productivity of labor which have recently been achieved by improvements in organization can hardly be expected to be the normal thing. Basic prices, therefore, will seldom decline at all rapidly as a result of these factors, and such decline as there is may not be continuous. A monetary policy which succeeded in keeping the money unit absolutely stable in terms of basic labor would permit only a very moderate fall of money prices. Keeping money prices stable, then, will generally involve only a very slight degree of inflation, if any.

If we accept the view that a little inflation is a good thing — and I think there is much to be said for it — we must conclude that the maintaining of stable money prices is ordinarily the wisest policy,[8] better than really stabilizing the

6. The facts of a situation may be difficult to determine very promptly. The owners of savings are no more eager to accept reduced earnings than laborers are, and resist as long as they can, often to the detriment of industrial stability. Sugar-coating the pill with talk about the necessity of higher wages in order to "sustain consumer buying power" is of little help.

7. I do not mean that no change is to be expected — in fact a decline seems not improbable in the immediate future — but that such changes as occur are likely to be relatively moderate.

8. This means, as we have seen, basing currency adjustments upon variations in the volume of production, without regard for the causes of

monetary unit (i.e. in terms of basic labor), and still better, of course, than stabilizing the money price of labor, which is likely, as we have seen, to entail more or less deflation. But this is a very different thing from saying that it is *always* best. There remains the possibility of exceptions — situations where the stabilizing of money prices would involve an unwholesome degree of inflation or deflation. It will always be the prudent thing, therefore, to establish the relevant facts as far as possible before accepting such stability as the goal of credit management in a given case. Precise allowance for these facts, it is true, may often be impossible; but is it too much to hope that, once we are clear as to what we need to know, the more serious results of monetary instability can be largely eliminated?

Complete success, however, seems too much to expect. The data available concerning the significant factors are so inadequate, and the interpretation of them so much a matter of judgment, that mistakes can hardly be avoided. When this happens, when the behavior of prices is, in view of the conditions, such as to indicate that a disturbing degree of inflation or deflation has developed, remedial measures are not necessarily called for. They are advisable only when the development is a recent one. When the whole economic system has had time to become adjusted to a given value of money, attempts to change that value, whatever their motive, will do more harm than good, as we have seen; but when the effects of monetary maladjustment have not spread beyond the prices of commodities, and incomes still reflect the previous situation, steps may properly be taken to undo the error. When deflation is needed, there will be opposition, it is true, from those who are profiting from the high prices; but if action has been taken promptly enough, they may not be very numerous, and the losses which threaten them will be mostly a matter of blasted hopes. Failure to apply the needed corrective would entail far more serious consequences for

these changes. The possibility that this policy may, under some circumstances, result in deflation, instead of the inflation considered in the text, is pretty remote.

society. In some cases, however, all that may be expedient is to "put on the brakes" a little in order to prevent the evil from becoming any worse.

These practical conclusions are not much at variance with the rule-of-thumb procedures now relied upon by the banking world. The authorities of the great central banks never tire of pointing out the necessity of taking account of a considerable variety of factors in formulating credit policy — many of them the very ones insisted upon in this discussion. But they have not been at all clear as to just why these things were relevant or how their importance was to be evaluated in particular cases, perhaps because they could not quite say. This is not to condemn their attitude as mysticism or, as hostile critics might say, mystification. Repeated contact with given forces and their consequences may give the experienced man an insight into them which may seem to others and even to him — more than one banker has said so — more akin to the predictions which rheumatic weather prophets derive from the "feeling in their bones" than to a fully rationalized process. The trouble with such guides to action, apart from their intellectual inadequacy, is partly their inaccessibility to all but a favored few, partly the danger that these mysteriously acquired and half-instinctively applied forces may some day fail us. To overcome these objections policy must be avowedly based on full theoretical analysis.

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MILEAGE RATES AND THE INTERSTATE COMMERCE COMMISSION

SUMMARY

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I.

The first large case in which the Interstate Commerce Commission prescribed a mileage scale was the Central Freight Association Scale case, decided in 1917. Central Freight Association territory is bounded, roughly, by the Great Lakes on the north, by the Ohio River on the south, by the Mississippi River on the west, and by an irregular line upon the east running from Buffalo through Pittsburgh to Parkersburg, West Virginia. Class rates in this area were, in 1917, already upon a distance scale; but charges were lower than prevailed elsewhere, and specific rates often deviated from the scale. The Commission had first suggested a revision of the class rate structure in Central Freight Association territory in the Five Per Cent case of 1914; the carriers, after two years' work, then submitted proposals, and the Commission prescribed two scales in 1917 that were based upon the work which the carriers had just done. Inasmuch as the final result was the substitution of new scales for other, older, scales, it is evident that no radical change in ratemaking practice was involved.[1]

1. C. F. A. Scale Case, 45 I. C. C. 254, 1917. See also 46 I. C. C. 475, 55 I. C. C. 290, 98 I. C. C. 660.

Following the Central Freight Association case, the Commission took advantage of an application by the New England railroads for an increase in rates to extend the mileage system into New England. The use of a mileage scale was proposed by the carriers in the New England case, in order to avoid protracted discussion of particular rates and to hasten the relief which they hoped to secure, but the Commission readily assented for more general reasons. In the Central Freight Association case there had been two approved scales, covering respectively Zone A and Zone B. Zone B rates had been applied in 1917 to a portion of the southern peninsula of Michigan lying north of the Michigan Central line from Chicago to Detroit, and south of a line drawn from Muskegon to Bay City. The Commission now required the carriers in 1918 to apply the rates of Zone B territory to the southern New England lines, while it permitted them to charge somewhat higher rates in northern New England where the density of traffic was less.[2]

A third extensive proceeding in which a mileage scale was prescribed was the Southern Class Rate Investigation of 1925.[3] This investigation grew out of the attempt of southern carries to remove irregularities in their rate structure which they believed that the Commission would condemn under the authority of Section 4 of the Act to Regulate Commerce. Students of transportation are familiar with the basing-point system of ratemaking which prevailed for many years in the states east of the Mississippi and south of the Ohio and Potomac. The Interstate Commerce Commission had been critical of "basing-point" ratemaking from the first. After 1910 it had power to compel a modification, and in 1914 the Commission reviewed southern rates comprehensively in the case entitled "Fourth Section Violations in the Southeast."[4] This and subsequent decisions started the carriers upon a long course of rate revision. Protests by

2. 49 I. C. C. 421, 1918.

3. 100 I. C. C. 513; 109 I. C. C. 300, 337; 113 I. C. C. 200; 128 I. C. C. 567.

4. 30 I. C. C. 153; 32 I. C. C. 61.

shippers against the changes which the carriers proposed to make led to an investigation by the Commission upon its own motion, and the prescription of a mileage scale in southern territory was the result. The new scale differed profoundly from previous rate systems in the South. It was not based upon any of the scales previously prescribed, altho these scales were considered in its preparation. It was not designed to bring more revenue to the carriers, nor was it approved by all shippers. Yet the decision establishing the Southern scale is noteworthy for the extent and importance of the territory to which it applied, and also for the full consideration of the technique of mileage ratemaking which characterized the decision in the case.

We next come to the territory west of the Mississippi River. The rate structure in this western area was highly complicated. It included various group and differential adjustments, and altho, in spite of these, class rates were generally constructed upon mileage scales, the mileage rates charged differed from each other with respect to levels, progressions, and class percentages, as well as with respect to the length of time during which they had been in force. Here was a situation requiring correction because it provoked charges of unreasonableness and discrimination; hence the Commission began to prescribe mileage scales in the west as early as 1911, and to extend the application of its orders as opportunity presented, in order to introduce regularity into a confused rate situation.

Western territory may be divided into the Mountain Pacific area, the Southwest, and Western Trunk Line territory. In the first of these sections the Commission laid down a set of maximum rates upon a distance basis in 1911, to govern railroad charges from Tacoma and Seattle, Washington, and Portland, Oregon, to points in Washington, Oregon, Idaho, and Montana. The order did not prescribe a complete scale,[5] but only set points every 100 miles which the carriers should not exceed. In 1922 the Commission followed up the beginning it had made by fixing a scale for

5. 21 I. C. C. 640, 1911.

all distances between 40 and 600 miles on interstate traffic from Portland, Medford, and other points in Oregon south of Portland, on the one hand, and points in Northern California on the main line of the Southern Pacific, on the other. This was the so-called Klamath Falls case,[6] the purpose of which was to equalize rates from Portland south with rates from San Francisco north. By 1928 The Klamath scale,[7] later known as the "Pacific Northwest scale," or rates at approximately the same level, was in effect on intrastate traffic in Oregon, Washington, Montana, and a portion of California, and on interstate traffic between points in these Northwestern states, including also Idaho. Substantially the same rates were also applied by the Commission to hauls between points in Arizona, on the one hand, and points in California, New Mexico, and El Paso, Texas, on the other,[8] and to still other points by decisions in 1928, 1929, and 1931.[9] By process of accretion the Klamath scale had developed, by 1931, into a general mileage system for the Far West.

Meanwhile, in the Southwest, a somewhat different sequence led to a similar result. In this territory the series of cases begins with a Commission decision of 1913, which prescribed a scale of class rates from Oklahoma points into Texas, following the mileage scale then enforced by the Texas Railroad Commission.[1] The immediate purpose of the Oklahoma-Texas scale was to equalize class rates into Texas

6. 74 I. C. C. 207, 1922.

7. The Commission had, of course, no direct jurisdiction over the rates from San Francisco to points in Northern California. It assumed jurisdiction indirectly, however, by finding that the existing rate adjustment caused undue prejudice, to be removed by publishing intrastate rates from Central California jobbing joints northward which should not be lower, distance considered, than the rates which would result from the application of the interstate rate scale.

8. 113 I. C. C. 52, 1926; 142 I. C. C. 61, 1928. The actual rates in these various scales were, of course, modified by general percentage advances and reductions approved by the Interstate Commerce Commission.

9. 147 I. C. C. 581, 1928; 157 I. C. C. 501, 1929; 172 I. C. C. 306, 1931.

1. 26 I. C. C. 520, 1913. This scale was superseded by the revised Shreveport scale as a result of the Commission's decision in the Southwestern Class case (48 I. C. C. 379, 1918).

southbound, with those northbound out of that state to Oklahoma destinations. Substantially the same schedule was applied in 1915 to traffic between Shreveport and points in eastern Texas (Shreveport scale)[2]; in 1916 the town of Ruston, Louisiana, was given the Shreveport rates,[3] and in the case of Shreveport Chamber of Commerce *v.* Kansas City Southern the Commission held that rates from Shreveport to designated points in Oklahoma and Arkansas should not exceed the rates for equal distances from Shreveport into Texas.[4] Later, the application of the Shreveport scale was still further extended. Before the end of 1916 it had been applied with some changes to traffic between Shreveport and points in Texas generally.[5] In 1919 the Shreveport rates, increased by 25 per cent, were applied to shipments from Natchez to Texas points in common-point territory [6] (Natchez scale); and the same year a very similar scale (Memphis-Southwestern scale) was prescribed on traffic between Memphis and points in southern Missouri, on the one hand, and points in Arkansas and Oklahoma on the other.[7]

Speaking in 1927, the Commission referred to the extensive use of mileage scales west of the Mississippi River as follows:

> In general, the class rates in the Southwest, in Kansas-Missouri territory, and between the latter territory and Oklahoma and Arkansas have been and are constructed on distance scales. . . . The scale prescribed in the Memphis-Southwestern case is now applicable between points in Arkansas; between points in Arkansas, on the one hand, and St. Louis, Memphis, Vicksburg, points in southern Missouri, points in eastern Kansas to a limited extent, and points in Oklahoma, on the other, usually for distances not in excess of 350 miles; and from Natchez, Mississippi, Monroe, Louisiana, and Shreveport to points in Arkansas. The

2. 34 I. C. C. 472, 1915.
3. 39 I. C. C. 287, 1916.
4. 39 I. C. C. 296, 1916.
5. 41 I. C. C. 83, 1916. See 48 I. C. C. 312, 1918 for other modifications.
6. 52 I. C. C. 558 (568), 1919. The 25 per cent increase was allowed because of the action of the Director-General in increasing rates by this extent through order No. 28, effective June 25, 1918.
7. 55 I. C. C. 515, 579, 1919. Cf. 39 I. C. C. 224, 1916; 39 I. C. C. 249, 1916; 39 I. C. C. 256, 1916; 43 I. C. C. 121, 1917; 45 I. C. C. 487, 1917.

Natchez scale is applicable between points in western Louisiana, and the Shreveport scale between points in Texas and between points in that State, on the one hand, and Oklahoma and Shreveport on the other. A scale termed the 100 per cent scale is applicable in Oklahoma and to a considerable extent between Kansas and Oklahoma. In *Class Rates Between Missouri and Interstate Points*, 100 I. C. C. 274, we authorized an interstate application of class rates between points in southern Missouri based upon . . . the Fargo scale. From practically all Kansas towns of more than a few hundred inhabitants to points in that State, the Kansas jobbers' scale, covering single-line hauls only, applies on the first four classes. Similar jobbers' scales apply between portions of Kansas and portions of Missouri. Locally in Kansas, where the jobbers' scale does not apply, a so-called standard scale, somewhat higher, is applicable . . .[8]

It was the opinion of the Commission that all-rail class rates should be on the same level and based upon a single scale of distance rates throughout the Southwest,[9] in central and western Kansas, and in the extreme southern portion of Missouri. In accordance with this view, the Commission prescribed a scale for general use in the Southwest in 1927, and a second scale with somewhat lower rates for use in northeastern Kansas and in most of southern Missouri except in a strip in close proximity to the Arkansas border where lower rates were approved. This scale superseded the older Shreveport, Natchez, and Memphis-Southwestern scales. It differed from them somewhat in method of construction, and it was on a higher level than any scale yet laid down.[1]

Having systematized the class rate structure in the Southwest, the Commission now proceeded to consider the problems of the states further north. Some progress had been made here, also, as early as 1913. In that year, in the Iowa case,[2] the Commission established a scale from points in Iowa (Prouty scale) to points in Kansas and Nebraska as part of a revision of the whole practice of basing rates upon the Mississippi and Missouri rivers. This scale began at the same point as the Shreveport scale of 1915, but its rates were

8. 123 I. C. C. 203, 217, 1927.

9. The Southwest was defined to include Arkansas, Oklahoma, Louisiana west of the Mississippi River, and Texas common-point territory. 123 I. C. C. 203, 208, 1927.

1. 123 I. C. C. 203, 477, 1927.

2. 28 I. C. C. 193, 563, 1913.

higher for distances under 90 and lower for distances over 90 and up to 450 miles, where the Shreveport scale ran out. A few years later, in the Missouri-River-Nebraska case the Commission applied almost the same scale (Clark scale) to shipments from the Missouri River to points in Nebraska,[3] except that the beginning point was somewhat higher, while in the Fargo case, in 1925,[4] it employed a scale (Fargo scale) with distinctly higher rates and more rapid progression to govern rates from St. Paul, Minneapolis, and Duluth to Fargo, North Dakota, Moorhead, Minnesota, and to some other designated points. As in the southwestern controversies, the orders in the cases mentioned were the result of complaints of unreasonableness and discrimination.

Still another and certainly the most important Commission order relating to rates in the Northwest was issued in the so-called Western Trunk Line case. This was the Commission's fifth comprehensive decision prescribing a mileage schedule in a major traffic territory. The proceedings in the case began in October, 1926. The purpose of the Commission was to introduce a greater degree of logic and consistency into the rate structure of the Northern Mississippi Valley; but it should be added that the revenue needs of the carriers figured more largely in the Western Trunk Line than in the Southwestern litigation. Indeed, the proposals of the carriers in the Western Trunk Line case had three avowed objects: (1) to remove the just cause of complaints of undue prejudice . . . ; (2) to coördinate the class-rate schedules in Western Trunk Line territory east of the Missouri River with those west of the river, and also to bring into harmony rates west of the river in that territory with those in Southwestern territory; and (3) to obtain increased revenue. . . .[5]

3. 40 I. C. C. 201, 1916.

4. 98 I. C. C. 691, 1925.

5. 164 I. C. C. 1, 44, 1930. Western Trunk Line Territory was described as including the northern peninsula of Michigan, Wisconsin, Minnesota, Iowa, that part of Missouri on and north of the Missouri River, Kansas, Nebraska, North Dakota, South Dakota, and that portion of Colorado and Wyoming on and east of a line running through Trinidad, Pueblo, Colorado Springs and Denver to Cheyenne, and thence over the Union Pacific to the Nebraska State line. (*Ibid.*, p. 10.)

In the Western Trunk Line case it was conceded that readjustment should be accomplished by the use of a mileage scale, and four such scales were actually employed corresponding to four zones into which Western Trunk Line territory was divided. In selecting the actual rates to be applied, the Commission mentioned the Prouty and Fargo scales, but more important considerations were the revenue which the new rates would yield, and the necessity of fitting the proposed new scales between the Southwestern mileage system on the one hand, and the low rates in official territory on the other.

Last of all the major mileage adjustments so far established by the Commission was that in Official classification territory in 1930.[6] The Eastern Class Rate investigation, concluded in 1930, resulted in a prescribed mileage scale, uniform for both Central Freight Association and for Trunk Line territories. The Commission report also set up a new scale for New England, higher than that established in the New England case of 1918, and a revised system of rates on shipments between New England and Trunk Line territory, on the one hand, and Central Freight Association territory on the other. With respect to New England and to Central Freight Association territory, the Eastern Class Rate decision introduced no new system of ratemaking. Both territories already possessed mileage schedules for making rates, and both retained them, tho at new levels. The case was different for Trunk Line territory; and here the Commission accomplished in 1930 an extension of the system already applied in the west, south, and in other portions of the east. It is not surprising, of course, that the Commission should have extended the system of mileage rates to Trunk Line territory; nor was there any opposition in principle, either because the general policy was believed to be firmly established, or because Trunk Line rates were full of incongruities which no one was ready to defend. The revised system of rates between Trunk Line and Central Freight Association territories represented the abandonment of a clear-cut and well-known rate

6. 164 I. C. C. 314, 1930.

structure; but this system, too, had become warped and illogical in places, and in any case it was hard to reconcile with the scales in local use both in the east and in the west.

The foregoing list includes the most important decisions in which the Interstate Commerce Commission has made use of a mileage scale, altho it is not, and does not pretend to be complete. In fact, since 1910, the Commission has prescribed scales in no less than 250 cases, and during the last seven years the number has ranged between 20 and 30 each year. These scales have extended to all parts of the country, and they have been used in a considerable number of cases involving commodity rates, as well as in class rate adjustments in which a mileage scale seems to be an obviously appropriate device.[7]

We shall not attempt to discuss the numerous minor cases in which the Commission has set mileage rates, but we will now, instead, consider some characteristics of the major scales which the Commission has established.

7. Professor Sorrell has published a list of scales (Traffic World, April 12, 1930) established or sanctioned by the Interstate Commerce Commission between 1910 and 1928. Brought up to date by the addition of cases decided in 1929 and during the first seven months of 1930, the tabulation stands as follows:

MILEAGE SCALES ESTABLISHED OR SANCTIONED BY THE INTERSTATE COMMERCE COMMISSION BETWEEN 1910 AND AUGUST 1, 1930

Year	*Number*	*Year*	*Number*
1910	1	1921	14
1911	4	1922	10
1912	1	1923	17
1913	0	1924	21
1914	1	1925	24
1915	4	1926	27
1916	9	1927	27
1917	10	1928	27
1918	6	1929	27
1919	2	1930	14
1920	4		—
			250

II

The traditional view among railroad men in the United States is that railroad rates should be adjusted by a process of intelligent guessing, in which the value of the service to the shipper is a prime consideration. This view has been largely accepted, even in academic and legislative circles, with the proviso that the total revenue from any given schedule of rates must not exceed a fair return upon the capital invested in or the value of the railroad plant. The practical results of this thesis in the past have been that studies of railroad rates have been largely concerned with the analysis of competitive relations in transportation and industry; rates have been made to adjust themselves to circumstances, rather than circumstances to rates. It would be too much to say that this point of view made a technique of ratemaking impossible, and still less that it was inconsistent with any analysis of railroad costs; yet it is, perhaps, evident that technique and cost analysis are less significant in ratemaking when the emphasis is upon the value of the service rendered by the carrier than when the main emphasis is upon distance, or upon the cost of supplying the service. The use of mileage scales, on the other hand, at once raises questions of technique. Since mileage schedules are fixed without knowledge of the points of origin or destination of particular shipments, they are little influenced by the value of service principle; while the very form of a mileage tariff directs attention to questions of initial rate, unit of distance, rate of progression, and to other matters which, once decided, provide a respectable body of technical practice.

The form of a mileage rate schedule may be illustrated by the following extract from Appendix H of the Commission's decision in the Western Trunk Line Class Rates case.[8]

8. 164 I. C. C. 1, 249, 1930.

DISTANCE SCALES OF RATES . . . PRESCRIBED IN THE REPORT FOR CONSTRUCTING RATES ON CLASS 1 APPLICABLE TO INTRATERRITORIAL TRAFFIC WITHIN AND BETWEEN W. T. L. RATE ZONES . . .

Distances	*Basic*	*Rate scales* *I*	*II*	*III*
5 miles and under	30	32	34	36
10 miles and over 5 miles	31	34	36	38
15 miles and over 10 miles	33	36	39	41
20 miles and over 15 miles	34	38	41	43
25 miles and over 20 miles	36	40	43	46
30 miles and over 25 miles	37	42	46	49
35 miles and over 30 miles	39	43	48	51
40 miles and over 35 miles	40	45	50	54
45 miles and over 40 miles	42	47	52	56
50 miles and over 45 miles	43	49	55	59

It will be observed that the scale cited is not the "barême" of European practice, as the schedule gives the absolute rate for all distances, and not the rate per mile. The difference between the two forms of quotation will be evident if we compare the Commission's scale with the following French scale taken from the Receuil Chaix.

SÉRIES DES TARIFS GÉNÉRAUX
(Par Tonne et par Kilomètre)

	Distances	*Séries* *1re*	*2e*	*3e*	*4e*	*5e*	*6e*
		fr. c.	*fr. c.*	*fr. c.*	*fr. c.*	*fr. c.*	*fr. c.*
Pour chaque kilomètre en excédent de	Jusqu'a 25 kilomètres	—16	—14	—14	—14	—10	—08
	25 a 33 kilomètres	—16	14	14	10	10	08
	33 a 50 kilomètres	—16	14	14	10	10	035
	50 a 100 kilomètres	—16	14	12	10	08	035
	100 a 200 kilomètres	—16	14	11	09	07	035
	200 a 300 kilomètres	—16	14	10	08	06	035
	300 a 500 kilomètres	—16	14	10	08	06	03
	500 a 600 kilomètres	—16	14	09	07	05	03
	600 a 700 kilomètres	—15	13	08	06	04	025
	700 a 800 kilomètres	—14	12	07	05	03	025
	800 a 900 kilomètres	—13	11	06	04	03	025
	900 a 1000 kilomètres	—12	10	05	04	03	025
	1000 a 1100 kilomètres	—11	09	05	04	03	025
	1100 kilomètres	—10	08	05	04	03	025

The French scale given above is not exactly comparable with the American, both because it is subject to certain percentage increases, and because it does not cover terminal expense; but placing the two tables in sequence reveals the important contrast between them in the matter of form: namely, that the French scale states the unit rate per kilometre, so that a process of multiplication is necessary in order to find the actual charge; whereas in the American scale the absolute charge and not the charge per mile is given. There is a further difference between the two forms of rate quotations in that the American schedule quotes rates by zones of several miles while the French unit is the single kilometre. Thus the American schedule is a zone or "staffeltarif" rather than a strict mileage schedule, and this is characteristic of all Commission mileage rates. Forty years ago the merits and demerits of such a system of ratemaking might have been vigorously debated. The question arouses little interest today because the practice of grouping nearby points is common and its advantages in the simplification of tariffs is understood. It should be borne in mind, however, that the use of zones in a mileage scale is necessary only when absolute rates are quoted, as in the United States. Were rates per mile used instead it would be practicable to deal in miles or in kilometres, instead of in zones, provided, of course, that a table of distances were at hand.[9]

Mention of the words "table of distances" brings us, now, to an initial difficulty underlying any attempt to set up a mileage schedule of railroad rates: namely, the calculation of the distances upon which the scale is to be based. The difficulty in ascertaining distances arises out of three causes. First, railroad mileages are by no means simple geographical facts, since constructive and arbitrary mileages are in common use both in the United States and in European countries. A second difficulty is present even when it is desired to use geo-

9. The form of the German mileage tariff resembles that of the American, while the English tariff rather follows the French practice. Standard rates in France, Germany, and England are all upon a mileage basis.

graphical distances in establishing rates between given points, for the reason that it is always necessary to choose between alternative routes when there is more than one line of railroad between the starting point and the point of destination. Lastly, the calculation of distance between any railroad station and all other stations in a country may involve a prohibitive amount of labor. In the Central Freight Association Class Scale case,[1] the carriers computed about 400,000 distances and then reported that to compute distances between all points in C. F. A. territory would be an enormous task and one, from a practical standpoint, not worth the time and expense required to perform it. Instead of computing distances between all points in the Central Freight Association case, the carriers selected a number of basing points, and the distance to a town for which no distance had been calculated was assumed to be the distance to the basing point next beyond. This general practice was approved by the Commission, but unfortunately the allied question of the determination of routes was not so easily determined. In the Central Freight Association case the carriers ordinarily used the shortest workable routes in presenting their proposals for revision of rates, and the rates calculated over the shortest workable routes were applied to shipments over longer routes between the same destinations. There were, it is true, some exceptions. Thus, if a short route involved a two-line haul it was not used if either of the lines composing it had a longer, but reasonably direct route of its own between points of origin and destination. Routes via two or more lines in the same railway system were given preference over routes by way of railroads which had no corporate connection with one another, and practicable routes which a shipper would expect to use were taken in preference to unused or theoretical routes. The Commission assented to these methods except in certain matters of detail.

The Central Freight Association case was decided in 1917. Eight years later, in the Southern Class Rate case, the Commission considered routing practice once more in connection

1. 45 I. C. C. 254, 1917.

with mileage tariffs, and now required the use of the shortest possible routes in fixing rates instead of the shortest workable routes, embracing as a maximum, however, the lines of not more than three carriers for distances up to 200 miles, four carriers for distances from 200 to 500 miles, and five carriers for longer distances.[2] One year afterwards, in 1926, on petition of the carriers, it restored the old requirement of using the shortest workable route, but defined the phrase to mean the shortest route that was, irrespective of existing traffic arrangements, physically adapted to the movement of traffic without plain and serious sacrifice of economy and efficiency.[3] Again, on further representation that the determination of an "economical distance" as contrasted with an absolute short-line distance involved the use of informed judgment and opened the door for endless argument as to the correctness of the results reached, the Commission redefined the term "shortest workable route" in a new proceeding as the shortest route over which carload traffic could be moved without transfer of lading.[4] This final formulation was the one used in the Western Trunk Line case[5] and in the Eastern Class Rate investigation,[6] and is the one which may be deemed finally approved. The ultimate solution is not entirely satisfactory to the carriers, some of which, at least, argue that the Commission's rule produces rates based on routes that are uneconomical and never used, and that it deprives the originating carrier of its statutory right to use

2. 100 I. C. C. 513, 656, 1925.
3. 109 I. C. C. 300, 312, 1926.
4. 113 I. C. C. 200, 206, 1926.
5. 164 I. C. C. 1, 195, 1930. In this case the following language was added in amplification of or in partial qualification of the formula: "In determining an interzone rate, or an interterritorial rate between points not provided with so-called key rates, the rate-making route should be that over which the shortest possible distance is computed: Provided, that in any instance where the class 1 rate so determined would be 5 cents or more higher than a rate arrived at over a longer route, due to a greater proportion of the distance passing through a lower-rated zone or territory, the latter will be the rate-making route. Car-ferry routes and distances across Lake Michigan should be treated the same as rail routes and distances.
6. 164 I. C. C. 314, 394, 1930.

the whole length of its line. The failure to allow an arbitrary amount to cover the added cost of shipments that require a two or more line haul is also the subject of criticism. The simplicity of the prescribed rule, however, and the objective character of the test applied have convinced the Commission of its merit; while the added cost of two-line hauls is provided for in determining the level of the general scale.

Mileage tariffs require the elaboration of still other practices besides those relating to the form of rate quotation and the determination of distances. There is, for instance, the question of the terminal charge. The cost of moving shipments may be analyzed into terminal and conveyance costs, and both types of expense must be provided for in the rate. French and English mileage scales do this in one way, and German and American in another. Thus in France and England there is a separate schedule for terminals, apart from the haulage rate. The English list of terminal charges includes a payment for the use of the terminal, and, in addition, charges for loading and unloading, covering and uncovering, where these services are rendered. The French list is similar. On the other hand German and American railroads normally weigh, load, and unload piece goods without separate charge, covering the expense involved by an addition to the general rate, or, at least, partially covering this expense, for it is probable that in Germany, as in the United States, some of the terminal outlay is provided from the conveyance revenue of the first few miles.

The following list sets forth the initial rates employed in a number of the recent Commission scales:[7]

7. 1. 45 I. C. C. 254, 299, 1917.
2. 49 I. C. C. 421, 486, 1918.
3. 100 I. C. C. 513, 727, 1925.
4. 113 I. C. C. 200, 207, 1926.
5. 113 I. C. C. 52, 66, 1926.
6. 123 I. C. C. 203, 477, 1927.
7. 164 I. C. C. 1, 249, 1930.
8. 164 I. C. C. 314, 467, 1930.
9. 164 I. C. C. 314, 468, 1930.

1. Central Freight Association Scale, 1917	16	cents
2. New England Scale, 1918	20.5	cents
3. Southern Scale, 1925	30	cents
4. Southern Scale, 1926	34	cents
5. Pacific Southwestern Scale, 1926	25	cents
6. Southwestern Scale, 1927	36	cents
7. Western Trunk Line Scale, 1930	32	cents
8. Eastern Class Rate Scale, 1930	30	cents
9. New England Scale, 1930	32	cents

It will be observed from the figures in the list that the initial rate set in the Central Freight Association scale of 1917 was 16 cents and that the rate set in the New England case of 1918 was 20.5 cents; but that all of the later cases except the Pacific Southwestern have used first-class minima ranging from 30 to 36 cents per 100 pounds. The figures selected, and the change from a lower to a higher base undoubtedly reflect the results of cost studies presented to the Commission in connection with its various investigations. Generally speaking, studies made between 1916 and 1918 indicated a terminal outlay of from 16 to 18 cents. The lowest estimate which the writer has noticed was in the Missouri River–Nebraska case of 1916, in which the Nebraska Railroad Commission estimated that the average, direct station terminal costs of handling intrastate less than carload shipments for the first four classes at the Lincoln station of the Burlington, and at other Nebraska stations on shipments from Lincoln, was 10.92 cents per 100 pounds.[8] This figure covered two terminal operations, but made no allowance for overhead. In the Shreveport case, however, carriers entered upon an investigation of their own, and reported that the terminal and station cost of handling less than carload shipments during six months at selected stations in Texas was 17.7 cents per 100 pounds for two terminals, exclusive of overhead.[9] Two years later, in 1918, the carriers made further studies in Louisiana and Oklahoma which confirmed the accuracy of the results in Texas, and led the Commission to remark that

8. 40 I. C. C. 201, 255, 1916.
9. 41 I. C. C. 83, 91, 1916.

the costs of handling less than carload shipments in this general territory were probably 15 cents or more.[1] Meanwhile in the East, in 1917, the carriers calculated that terminal costs on less than carload traffic at typical stations upon the Big Four, Wabash, and Pennsylvania lines were from 12 to 16 cents for two terminals, including overhead.[2] The Commission's decision in the C. F. A. Class Scale case was apparently based upon this conclusion. These were all low estimates, which were increased in later years, when the effects of the increasing price level had become evident. Thus, in the Southern Class Rate case the carriers estimated that the cost of two terminal services for less than carload freight was 30 cents, including overhead, basing their opinion upon cost studies of traffic handled by the Nashville, Chattanooga & St. Louis at Atlanta, Chattanooga, Huntsville, Ala., Rome, Ga., and Gadsden, Ala., during two weeks in October and November, 1921. The Commission's accountants did not entirely accept this conclusion,[3] and the Commission itself expressed no opinion on the general question except to point out the difficulty of arriving at a correct result, and to observe that the question of terminal costs would not be set at rest until tests were made at many points, over a considerable period of time under the direction and supervision of the Commission.[4] In a supplementary opinion, however, the Commission changed the initial rate of 30 cents set in the original decision to 34 cents in the light of information then available.[5]

The Klamath County and the Arizona Eastern cases in the

1. 48 I. C. C. 312, 330, 1918.
2. 45 I. C. C. 254, 272, 1917.
3. The Commission's accountants reached the conclusion that the cost at large terminals incident to the receipt or delivery of less than carload traffic was probably in the neighborhood of 10 cents per 100 pounds for one terminal operation, including a reasonable allowance for return upon investment. This was less than the carriers' estimate of 15 cents (30 cents for two terminals), but it was in reasonable accord with the figure of 12 cents per 100 pounds estimated by the carriers for Atlanta and Chattanooga. The accountants were, further, of the opinion that the data submitted were inadequate to support any conclusion with respect to the cost at small local stations.
4. 100 I. C. C. 513, 638, 1925.
5. 109 I. C. C. 300, 337, 1926.

Far West both reported the results of terminal cost studies. In the former, the terminal costs were estimated at 22.75 cents per 100 pounds in 1920, and in the latter the figure was 29.81 cents in 1922, without overhead, but including, apparently, the costs of intermediate transfer. Allowance for general charges raised the estimate in the latter case from 29.81 cents to 41.4 cents.[6] Finally, in the Western Trunk Line case of 1930, the question of terminal costs was again elaborately considered. In this case the carriers submitted the results of an investigation of less than carload terminal costs which they had undertaken in 1923. This study had been conducted by 21 railroads at 102 stations in the Western Trunk Line Territory and in Illinois, and covered a period of a week in November, 1923. Its conclusion was that the cost of handling 148,000,000 pounds of less than carload freight in terminal service, at the time and place indicated, had been 27.34 cents per 100 pounds for two terminals, not including overhead. On objection that conditions had changed the study was repeated by 18 Class I railroads at 171 stations in 118 cities or towns in Western Trunk Line Territory and in Illinois during a seven day period in April and May, 1927. The new investigation yielded a figure of 27.13 cents per 100 pounds for two terminals, or substantially the same results as in 1923. Inasmuch as this sum represented terminal cost on all the various classes of less than carload freight without distinction, and did not allow for overhead, nor for handling expenses at points intermediate to stations of origin and destination, the carriers made certain calculations to include the missing factors, and reported an estimate of 29.6 cents as the cost of terminal service on first-class freight without overhead, and 43 cents as the cost including general expenses and return upon the money invested.[7] There is a good deal of variation between these different figures, which may be in part explained by the difficulty in selecting typical stations, and by the un-

6. 74 I. C. C. 207, 215, 1922; 113 I. C. C. 52, 60, 1926.

7. 164 I. C. C. 1, 94–97, 1930. The 1927 study concluded that the expense of rendering two terminal services to 100 pounds of carload freight was 3.47 cents, and that the average for both carload and less than carload was 19.18 cents.

certainties inherent in the allocation of costs between carload and less than carload operations.[8] The best that can be said is that there is a reasonable basis for an estimate of terminal costs approximating 30 cents, and that this seems to have supplied the basis for the initial figure in most of the Commission's mileage scales.

By and large, the level of a mileage scale, as distinguished from the initial rate at which it begins, or the terminal charge which is added to the conveyance rate, will depend upon the revenues which it is desired to obtain or upon the general competitive conditions which it is necessary to meet. This is, however, qualified by the frequent necessity of fitting the scale into some larger structure. In the Southern Class Rate Investigation the carriers proposed to build a scale around three so-called "peg" points; first, an initial rate of 30 cents, to be justified by studies of terminal costs; second, a rate of 145 cents for 330 miles, which was the rate and distance from Cairo to Birmingham; and third, a rate of 160 cents for 460 miles, which was the rate and distance from Atlanta to the Ohio River.[9] The second and third pegs were derived from rates previously established by the Interstate Commerce Commission. Similarly, in constructing a scale for use in

8. The Coverston-Saur formula has been several times mentioned by the Commission in its discussion of terminal expenditures. This formula was prepared by two railroad officials. It provides a list of accounts, numbered according to the Interstate Commerce Commission classification, which should be assembled in order to secure the total costs of terminal railroad operation. Where apportionment is necessary, a basis of apportionment is suggested. The Coverston-Saur formula corrects its final figure to allow for return on property investment by dividing the absolute operating terminal expense by the railroad operating ratio. Thus if the ascertained terminal cost of a particular traffic is $3.50 per car, and the operating ratio is 66.67 per cent, then the true terminal cost, including return upon investment, would be $3.50 ÷ .6667, or $5.25 per car. This is the weakest part of the formula, for the addition for return on property investment grows larger as the operating ratio declines to an extent which makes general conclusions extremely difficult. If a low operating ratio were generally the result of large property investment, the method could be defended in spite of this defect, but one cannot assume that there is such a correlation.

9. 100 I. C. C. 513, 535, 1925.

Central Freight Association territory, the carriers assumed as a guiding rule that the sixth class rate for the distance of 475 miles between Chicago and the western termini of the trunk lines should not exceed 16 cents, because any greater sum would exceed the existing rate from Chicago to Rochester, New York — that is, to a point which lay outside of the Central Freight Association area and was presumably unaffected by the pending revision.[1] Again, in the Eastern Class Rate Investigation, the carriers started with a fifth class rate of 34 cents for 440 miles, the distance from Pittsburgh to New York. Thirty-four cents was the existing rate between Pittsburgh and New York, and it was desired to leave this rate unchanged because of the immense volume of iron and steel which moved on it from the Pittsburgh district. On a fifth class rate of 34 cents the carriers built a first class rate of 97 cents, and a general scale in which the first class rate increased from an initial 30 cents to the amount of 97 cents in the course of the first 440 miles.[2] It happened in all of these cases that the Commission was able to find a way to avoid the compulsion of outside adjustments, yet even the Commission in the Western-Trunk Line case of 1930 felt itself controlled in a general way by its own decisions in Southwestern and in the Trunk Line territories, and was compelled to fit the new Western Trunk Line scales somewhere in between the levels in effect on the south and on the east.

It follows from what has been said that the general measure of a mileage scale may be controlled by preëxisting and external conditions. But the form of a scale is another matter, and with respect to form theoretical considerations may be given freer play.

Is there a formula which can be used in constructing a mileage tariff? The answer to this question is that the older mileage scales are apt to mention some formula, such as that mileage rates should increase as the square of the distance,[3]

1. 45 I. C. C. 254, 260, 1917.
2. 164 I. C. C. 314, 336, 1930.
3. See testimony of M. R. Talbott before the Industrial Commission, 1900, vol. ix, p. 631.

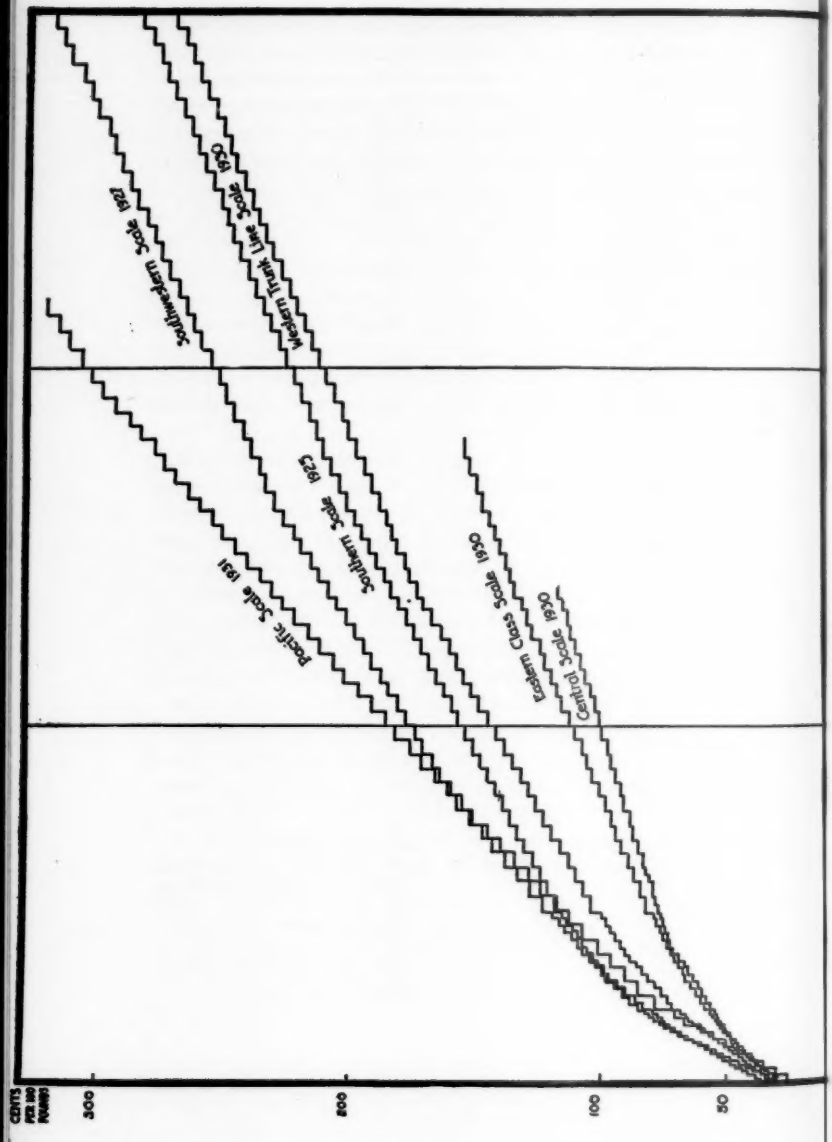
and that suggestions for a formula may be found in some theoretical discussions. Even the Interstate Commerce Commission has used a formula in some cases, based upon a method of separating costs between terminal and line hauls which its statistician has worked out,[4] and built upon the assumption that the rates in a mileage scale should express the product of the number of miles and the line-haul cost per 100 pounds added to a constant terminal charge. It may be said in passing that a formula like this results in a constant rate of progression, and so has the merit of simplicity. The German "Stückgut" tariff of 1927 is almost, if not quite, a tariff of this sort, up to distances of 800 kilometres, where noticeable zones begin to appear. In spite of this, the Commission has no general formula, but only opinions on particular questions,[5] and there is no American rate theory which goes further at the present time.

Coming back, then, to the question of the form of a mileage scale, we may say that the principal Commission scales show that there is a tendency for the rates in these scales to increase less rapidly than distance. The chart on the next page illustrates this by depicting the class rates prescribed, respectively, in the Trunk Line, Western Trunk Line, Southern, Southwestern, and Pacific territories. For purposes of comparison there is added the scale in force in Central Freight Association territory in 1930, which was based upon a Commission decision of 1917.

The important feature of all of the American rate schedules, from the point of view of the immediate topic of discussion, is that they all show a declining rate of progression, accomplished partly by enlargement of the zones in the case of hauls

4. 157 I. C. C. 586, 615, 1929; 48 I. C. C. 201, 1918.

5. The Commission said, in the Consolidated Southwestern cases: "No generally accepted mathematical formula has been developed for the construction of a scale of distance rates. Most of the scales made by carriers or prescribed by us have been built to fit particular situations. The ordinary method, it appears, has been to select or fix certain objectives — i.e., rates for certain distances which are deemed reasonable or desirable — and then build the scale around these key rates." (123 I. C. C. 203, 384, 1927.)


Western Class Scale 1930
Southern Scale 1923
Pacific Scale 1931
Southwestern Scale 1923
Western Trunk Line Scale 1930
Eastern Class Scale 1930
Central Scale 1930
CENTS PER 100 POUNDS
300
200
100
50

extending over longer distances, and in part by the failure to add equivalent amounts to the rate as the schedule advances from zone to zone. With respect to the length of zones and the points of change from zones of one length to zones of another, all of the American mileage scales in the chart are identical, with the exception of the Central Freight Association scale and that in the far west. Rates are quoted, that is to say, for blocks of 5 miles up to a distance of 100 miles, then in blocks of 10 miles up to a distance of 240 miles, then in blocks of 20 miles until the 800 mile point is reached, and in blocks of 25 miles for distances over 800 and up to and including 1500 miles. The Southwestern, Southern, and Western Trunk Line scales but not the Eastern Class Rate and New England, provide for distances in excess of 1500 miles. In these scales the blocks change to 50 miles after the 1500 mile station has been passed. With respect to the rate additions from zone to zone the scales are not identical, but the amounts added range in the shorter distances from an average of 1.368 cents addition from 5 mile zone to 5 mile zone over the first 100 miles in the Eastern Class Rate scale to one of 2.736 cents addition in the Southwest. In the longer distances the amounts added per zone tend to be greater than in the shorter, but the enlargement of the zones brings it about that the rate of increase falls off. This is the basis for the statement that the scales show a declining rate of progression. It should be pointed out, however, that if we consider percentages instead of absolute amounts the result is somewhat different. While it is never true that doubling the distance doubles the rate, yet the percentage of increase in the rate which follows a doubling of the distance is irregular and shows a tendency to increase in the greater distances. Thus an increase in the length of haul from 200 to 400 miles generally causes a greater percentage change in the rate than an increase from 100 to 200 miles, while the percentage change when the haul is extended from 400 to 800 miles is still greater.

In discussing the relationship of rates upon the longer hauls to those on the shorter, the Commission does not usually refer to the value of the service or to competitive influences, al-

tho there are cases, as in the Pacific Northwest and in the South, where these considerations have evidently had weight.[6] Still less does it undertake to calculate the best distribution of consumers and producers surplus from transportation after the fashion of some European discussion.[7] What the Commission has to contribute is on the side of cost, with the exception of the matter which is about to be mentioned, and which bears directly upon the question of rate progression.

It is the view of the Interstate Commerce Commission that the initial rate does not and should not completely cover the initial expenditure involved in transporting freight. This conclusion is, perhaps, the final result of the evidence with respect to terminal costs reviewed in preceding pages. The principal reason given is that a scale so constructed would be prohibitive for shorter hauls, and would drive traffic to motor trucks. Hence, perhaps, the low initial rates of the Pacific Northwestern scale, in a territory where motor vehicle competition is exceptionally severe.[8] If terminal costs are not to be covered by the initial rate, then the balance of expenditure

6. In the first Southern Class Rate Investigation the carriers argued for a scale which increased rapidly during the first 100 miles and less rapidly thereafter. The argument was based partly upon the high cost of short as compared with longer hauls, and in part upon the opinion that the rates for long hauls in the South were controlled by group and historical relationships that it was desirable to preserve. It was thought that the rates upon short hauls could be fixed without reference to such competitive considerations. Southern shippers did not, in 1925, assent to the carriers' views, but the Commission seems to have been influenced by them; for the Interstate Commerce Commission scale of 1925 for application in the Southern states is characterized by a distinct hump up to distances of 100 miles. The hump was so marked that the Commission pared it down in the following year with the remark that the rates for shorter distances had been made so high in 1925 as to impair their usefulness and reasonableness. All of this is, of course, a clear case of a controversy concerned with the form of a mileage scale. (100 I. C. C. 513, 1925.)

7. Cf. Clark, J. M., "Standards of Reasonableness in Local Freight Discrimination," N. Y., 1910, pp. 140 ff.; Colson, C., "Transports et Tarifs," Paris, Rothschild, 1898, pp. 58 ff.

8. In the Arizona Eastern case (113 I. C. C. 52, 1926), the initial rate was set at 25 cents, first class, altho the carriers contended that the average terminal cost, including overhead, was 41.4 cents per 100 pounds on traffic moving in the first four classes.

not provided for must be added to the conveyance rate, amounting, in substance, to a surcharge which becomes less and less as the length of haul becomes longer.

Whether, beyond this, the cost of conveyance per mile declines as the distance increases is a matter as to which there is some difference of opinion. In the Western Trunk Line case the carriers argued against the use of steadily diminishing units of progression on the ground that long hauls require a continuing succession of expensive services at intermediate terminals. This is also the opinion of the English Railway Rates Tribunal for distances above 100 miles.[9] On the other hand, it can be maintained that the line cost itself becomes less per mile as distance increases, because railroad cars and railroad tracks are more efficiently used on long than on shorter hauls. Less than carload freight is handled, for distances up to 75 miles, largely in way trains. These trains are lightly loaded, often with a weight of less than 10,000 pounds; the freight is loaded in station order, cars stop at all stations, and regular service is provided. Freight shipped greater distances, on the contrary, is handled in through trains. The load per car in through service is often as high as 20,000 pounds, the stops are fewer, proportionately less of the distance travelled is on branch lines where the density of traffic is small, and, altho there is more switching, the cost per ton is lower. Differences between the cost of long and of short hauls are much less for carload than for less than carload freight, but even in the case of the former, some variations in the cost of service may occur.[1]

9. See Sherrington, C. E. R., "Economics of Rail Transport in Great Britain," vol. ii, p. 102.

1. On the general subject of progression, the reader may consult a careful article in the Traffic World for September 17, 1927, in which the author, an accountant, comes to the following conclusions:

1. Rates of progression for the various hauls should give consideration to all of the road haul transportation conditions: (*a*) train service, (*b*) car service, (*c*) maintenance and use of fixed property, (*d*) intermediate yard and interchange service and (*e*) unusual conditions pertaining to particular situations.

2. The rate of progression should be at its highest on the very short hauls and at its lowest on the long hauls. The relation of the highest to

III

It would be possible to enlarge upon the technique of mileage ratemaking, but it will probably be better to conclude this discussion with some comments upon the effects and on the merits of mileage scales as we have seen them in the United States.

There is very little generally known about the influence of prescribed scales on railroad revenues. Some of the scales we have described were intended to increase the revenues of the rail carriers. None of the major scales had for its primary purpose the reduction of revenues.[2] In view of the violent fluctuations in the activity of business during the past five or six years, however, it would be idle to attempt to say whether the Commission scales have raised or lowered railroad earnings, and the matter is, in any case, unimportant because the level of a scale can be varied up or down as the needs of the carriers or of the shipping public may require.

When it comes to the effect of Commission scales upon established class rate structures, the conclusion is different. The new system of ratemaking has modified railroad practice in important particulars in Trunk Line, Western Trunk Line, Southern, and Southwestern territories, and in less important ways in Central Freight Association territory and in the Far West.

In the Southwest the new mileage tariffs have compelled

the lowest should be wider in a L. C. L. scale than in a carload scale because of the increasing load per car as the distance increases . . .

3. The lowest rate of progression in a carload scale should be reached after the influence of local train and branch line service has largely disappeared — usually after 100 or 125 miles.

4. The lowest rate of progression in an L. C. L. scale should not be reached until 200 or 300 miles, or beyond.

5. Separate schedules should be provided for L. C. L. class distance scales and for carload class distance scales, recognizing the totally different conditions pertaining to each and with totally different short and long haul relationships.

2. The Commission estimated that the revision of class rates in the Western Trunk Line territory would add $10,000,000 to $12,000,000 to the revenues of the carriers. Unofficial estimates suggested an addition of $25,000,000 as the result of the Commission decision in the Eastern Class Rate case.

the revision of the old Texas common point rate system. As late as 1927, all-rail rates from most northern points were the same to all stations in Texas common point territory. Moreover, within Texas and on shipments from Shreveport into Texas, rates were graded only for comparatively short distances. For all greater distances they were blanketed; thus on many commodities the rates in Texas were the same for hauls of 600 as for hauls of 75 or 80 miles. This whole system has now been profoundly changed. On relatively short hauls a simple mileage scale applies. On shipments over longer distances the Southwest is broken up into a number of groups, differing in outline according as freight enters by way of St. Louis, Memphis, Vicksburg, or New Orleans, and rates are provided to these groups from other groups or designated key cities east of the Mississippi River.

In the Southern states the principal innovation has been the substitution of another scheme of rates for the old basing point system, and new relationships have been created besides on shipments between northern territory and southern points. The continuance of the basing point system had been made impossible by a series of Interstate Commerce Commission decisions beginning in 1914,[3] but the process of revision was interrupted by the War, and no comprehensive substitute for the old rates was proposed until the Commission prescribed a mileage scale in 1925. The Southern basing point system is now a thing of the past,[4] and with it has gone another peculiarity of Southern ratemaking, namely, the peculiar position from a rate point of view, of cities upon the Ohio River. Prior to the establishment of the Southern scale, the rates between northern and southern points were made by combination of local rates to and from the Ohio River or the Virginia cities,

3. 30 I. C. C. 153; 32 I. C. C. 61; 55 I. C. C. 515, 648; 57 I. C. C. 107.

4. There may still be, however, a few instances in the South of greater charges for shorter hauls. The Commission has expressed willingness to grant relief from the rule of section 4 (1) so that circuitous routes may meet the rates at competitive points fixed by short-line or ratemaking routes; (2) in order to permit group adjustments to be maintained; (3) in special cases arising in connection with interterritorial rates made upon a differential basis. (100 I. C. C. 513, 708–709, 1925.)

with some use of direct rates lower than the local combinations. The dominant local rate from the Ohio River to the South was the rate from Louisville, and the rates from other Ohio River crossings were the same as, or differentials over, the Louisville rate. At the present time interterritorial rates between the North and the South are made, either by combining the class rate under the standard Southern scale with the rate in a so-called differential scale from the Ohio River or Virginia cities to northern points of final destination, or, in some instances they are quoted directly between selected "key points" in the North and some 30 or more groups into which the South is divided for the purpose.[5]

In Western Trunk Line territory the most important effect of recent Commission decisions will doubtless be the introduction of order into western rates. Mr. McManamy, speaking for the Commission in this case, declared that "Rate structure, in the sense of implying an orderly and balanced framework underlying all rates covering a territory, is a misnomer when applied to the heterogeneous mass of interstate and intrastate class-rate distance scales, generally with joint-line arbitraries, specific rates, differentials, groupings, and relationships, existing in Western Trunk Line territory; with the possible exception of the rates between gateways and important points in that portion of the territory east of the Missouri River."[6]

Apart from the fact that it simplifies rates, the Commission's decision in the Western Trunk Line case is, however, significant because it finally eliminates the Mississippi and the Missouri Rivers as basing lines. Thus the Commission accomplished in the West in 1930 something similar to what it had done in the South in 1925, and for very much the same reasons. It is interesting to observe that there was opposition to the introduction of joint interterritorial rates between Eastern and Western Trunk Line territory on the avowed ground that such charges would open Western Trunk Line territory to eastern manufacturers, possibly as a dumping

5. 109 I. C. C. 300, 339, 1926.
6. 164 I. C. C. 1, 23, 1930.

ground for surplus products, to the injury of the later and less highly organized industries of the West. The Commission[7] disregarded this plea for local protection, and prescribed a system of direct rates between key points in the East and other points in the West to the general advantage of our national economy.

In Trunk Line territory the new rates have brought about the abandonment of the system of port differentials on domestic business, and they have eliminated the old practice of relating interterritorial rates to the charges between Chicago and New York.[8] The change in the basis of rates between points in Trunk Line and points in Central Freight Association territories mentioned in the preceding paragraph is especially interesting, if only because the old Trunk Line system was, with the Southern basing point and the transcontinental rate structures, among the best known of all the American rate adjustments. This system applied to an important traffic territory, it offered what seemed to be a successful instance of a distance tariff at a time when railroad men were emphasizing the theory of the "value of the service," and it supplied the attraction of an understandable formula which could be expounded to inquiring minds. For these reasons the Trunk Line rate system received extensive publicity. As a matter of fact, it was not strictly a distance structure,[9] and the rates which replace it also depart from the dis-

7. 164 I. C. C. 1, 141, 207, 1930.

8. The carriers wished to retain the differential rates to Philadelphia and to Baltimore, but the Commission could see no reason why these cities should be treated in a substantially different way from other cities, merely because they were ports as well as industrial cities. The Commission said of the differentials "[They] have certain singular and unexplained characteristics. They are not the same in both directions, and eastbound they are the same in amount on all classes, a wholly anomalous adjustment. Their continued use would result in the complete disruption of the uniform class percentages to and from the lower ports. They do not reflect distance in a degree compatible with other relations which will be produced by our findings in this proceeding." (Eastern Class Rate Investigation, 164 I. C. C. 314, 417, 1930.) On export and import business the differential structure was left unchanged.

9. The Interstate Commerce Commission said of the Trunk Line system in the Eastern Class Rate Investigation: "The system falls short of being the equivalent of a distance scale in several respects: *First*, the

tance principle. What the Commission has done here is to eliminate all formal and direct dependence of the rates between Trunk Line and Central Freight Association territories upon the basic rate between Chicago and New York. Instead, the Commission has established a list of maximum rates between 105 key points in Central Freight Association territory and 54 points in New England and Trunk Line territories, selected to include all of the larger centers of population and certain smaller points chosen for geographic reasons. The key rates are based to a large extent but not rigidly on distance, and like the older plan, the key system contemplates the use of groups, all points in which take the key rate. The key cities are not intended to be the centers of such groups, but, rather, the rates fixed to the selected places are to be blanketed back over intermediate areas until the next key point is reached. This had been, also, the practice in the Trunk Line system. The new system becomes effective only on December 31, 1931, so that it is impossible to say what changes will result in actual rates; altho the probabilities are that the alterations will not be so radical as at first supposed.

Most people would be inclined to admit that recent Commission scales represent an improvement upon past practice. Certainly American rates were frequently so confused as to defy analysis, and this needed to be changed; and American ratemaking was on a sectional basis, with sharply defined

percentages above 100 are percentages of distance, e.g., Cairo, Ill., is a 120 per cent point because its distance from New York is 120 per cent of the New York–Chicago distance, whereas the percentages below 100 are based on an assumed separation of terminal and line-haul costs. *Second*, the distances upon which the percentages are based are not computed according to a common principle. A few groups have percentages which are lower than those to which their short-line distances would entitle them, but in most instances the percentages are higher because they are based on shortest distances arrived at by use of the Pennsylvania lines' mileages. The percentages that most nearly conform to distance are those of groups lying along the direct routes between New York and Chicago. *Third*, the percentage formula used in relating points in central territory to one another is not in use in trunk line territory, where until rather recently the carriers have not graded the rates except to and from points in the State of New York." (Eastern Class-Rate Investigation, 164 I. C. C. 314, 329, 1930.)

lines between territories based on accidents of historical development. This, also, was a condition which required revision. The Interstate Commerce Commission has worked patiently and constructively at these and at other rate problems. In its own eyes the great advantage of the new dispensation is to be found in the relative simplicity of mileage rates as compared with the structures they have replaced, and in the fact that the charges in a mileage scale are consistent with each other. Simple structures are not necessarily better than complicated ones, in rates any more than in biology, but they are easier to understand, and the first step in conscious human progress is understanding. Moreover, rates in a mileage system are more likely to be consistent with each other because distance is easier to measure than, say, competitive advantage. Speaking of the advantages of a mileage scale in eliminating discrimination, the Commission has quoted a League of Shippers as follows:

> Granting perhaps that the cost of railroad service may not vary in ratio to increasing distance, yet costs are not ascertainable and it seems generally to be agreed that no system of class rates could or properly should be constructed with reference to variations of the details of cost even if they were available. But there is one standard at least readily available by which to measure and unify all class rates and that is the standard furnished by the quantity of service rendered expressed in terms of miles. In other words, the measure of service furnishes an inflexible yard stick to which all charges could be made to conform without discriminations. Every community would then find its place automatically fixed by the accident of its location and there would be no room for attempting to equalize natural advantages and disadvantages.[1]

Besides the advantages of simplicity and orderliness, mileage rates have other merits. They are, for instance, relatively stable. They may be expected to change less frequently than rates based, for example, upon the value of the service. Business and settlement can adjust themselves to any long-continued practice. Mileage scales are an approximation to a measurement of the quantity of service that shippers are securing. Mileage rates tend to check wasteful transporta-

1. 100 I. C. C. 513, 567, 1925.

tion. It is not always true that the shortest route is the most economical, but it does seem probable that a community will save money if it ships, in general, over direct ways. And, finally, mileage rates tend to diffuse population because they deprive the larger towns of the bargaining advantages which are connected with their superiority in numbers and in wealth.[2]

The Commission summed up these and other considerations affecting the policy of mileage ratemaking in its decision in the Eastern Class Rate Investigation.

> "What alternatives," asked the Commission, "are offered by those who oppose such a basis? The fact is that with certain exceptions . . . , the only alternatives which are here offered are (1) adherence to rates which have the sanction of long-established custom, and (2) the adjustment of rates so that more remote producers can compete in a common market to better advantage with their nearer rivals.
>
> "Long established custom is a matter to be considered in the revision of rates, but certainly it cannot justify rates which are unreasonable, unduly prejudicial, or otherwise unlawful. Doubts may be resolved in favor of what has long existed, and the acquiescence of shippers in such an adjustment may tend to show that it is free from undue prejudice; but otherwise custom is of little weight. And clearly we are without power to adjust rates for the purpose of neutralizing the geographical disadvantages of producers."[3]

In opposition to the favorable views set forth in the preceding paragraphs, there is a respectable opposition to the principle of mileage tariffs. Mileage rates are not simple, it is contended, or at least they are not more simple than other rates can be made. They promote an undesirable localization of industry, injuring the carriers by reducing the ton miles of service performed, and injuring the nation by restraining the healthy growth of great cities. It is argued that mileage does not measure cost, not only because of differences in topography and in density of traffic, but also because distance charges do not reflect the costs of handling at intermediate

2. See Harkrader in Traffic World, October 11, 1930, p. 882, and Cotterill, C. E., in Ibid., November 8, 1930, for a discussion of the advantages and disadvantages of mileage rates.

3. 164 I. C. C. 314, 382, 1930.

terminal yards and gateways. Still more important, distance does not measure the value of the service. Specifically, mileage rates do not give adequate recognition to competitive factors. Business must be carried on under competitive conditions. Competition does not follow geographical lines or conform to variations in distance, and, consequently, a system of rates which adheres rigidly to distance frequently resists the normal flow of traffic. While the Interstate Commerce Commission has shown a weakness for mileage rates, another branch of the Government, the Post Office Department, has defended a proposed increase in the rates on first class mail by observing that the controlling factor in fixing rates is not the relative cost of the different classes of mail matter and service but the relative amount which the traffic will bear in view of competition without reduction of organization and facilities which contribute to the integrity of the organization as a whole. This, say the critics of mileage scales, expresses the policy which should be followed in determining railroad rates.

Balancing the arguments pro and con, and remembering the highly pragmatic attitude of the Commission, we may anticipate that mileage ratemaking will continue to make its way, but with slow steps. Up to the present time the Commission has been as cautious as it well could be and yet require mileage tariffs at all. It has, for instance, while prescribing mileage scales, always admitted the possibility of departing from the literal rule. Thus it pointed out in the Southern case that the distance rates prescribed were maximum rates, and observed that the carriers might publish lower rates than the scale provided, to the extent that this could be done without creating undue preference and prejudice. And the Commission added the following general remarks which are an illuminating expression of the Commission's considered attitude toward mileage rates. Speaking of the new mileage structure in the South, the Commission said:

> Flexibility should be permitted in the application of the scale. There is nothing sacred about distance rates. They are recommended as, on

the whole, a convenient, logical, and readily understood method of measuring the service afforded in the movement of class traffic, and a method which is further supported by average underlying costs. But distance rates should not be so rigidly observed as to violate considerations of convenience and simplicity in tariff construction without any substantial compensating gain. For instance, a group of stations may be located within the limits of what is in reality a single industrial community, yet the mileage blocks of the distance scale may so fall as to create differences in the rates to these stations from a common point of origin. A departure from the strict application of the scale to the extent necessary to publish the same rate to all points in the community ought to be possible in such cases. And it is probable that for the longer hauls simplicity in tariff publication and advantage rather than disadvantage to the public interest may be gained by the use of groups of moderate extent, figuring the rate from a central point within the group. Other deviations from a rigid application of the scale may be desirable which do not offer substantial violence to the general principles upon which it is based.[4]

Concentration upon one side of the Commission's activity in the course of the present article should not lead us to forget the importance which the Commission attaches to the value of the railroad service, its effective opposition to the passage of a rigid long and short haul clause, and its recognition of the financial position of particular industries as pertinent facts under the Hoch Smith resolution. It may be, too, that the development of motor vehicle transportation will compel some special departure from the mileage principle on short hauls. These are all qualifications which are called to the reader's attention in order that he may not suppose that the Commission has launched upon an unrestrained policy of enforcing mileage rates. The sober fact probably is that the Commission will continue to tinker with the schedules which it had introduced and to use the new scales to determine

4. 100 I. C. C. 513, 657, 1925. With further reference to the use of groups, the Commission, in the Western Trunk Line case, expressed disapproval of large groupings such as the proposed grouping of Milwaukee and Chicago, or of the Missouri River cities from Kansas City to Sioux City, inclusive, and suggested that the maximum dimensions of a group might be set at 25 miles on short hauls, at 30 miles on hauls of 400 miles, and at 50 miles on hauls of 800 miles and over. (164 I. C. C. 1, 198, 1930.)

charges of unreasonableness and discrimination in other and particular controversies. It may also be expected to apply the mileage principle to ratemaking somewhat more largely in the future than it has done in the past, altho it will avoid doctrinaire insistence upon a mileage or any other single basis of ratemaking with the plea that it is interested in "reasonable" rates and that reasonableness has many aspects. There is, however, no question about the importance of the group of cases reviewed in the preceding pages, and little doubt but the practices discussed will be extended.

STUART DAGGETT.

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ECONOMICS AND SOCIOLOGY: MARSHALL IN RELATION TO THE THOUGHT OF HIS TIME

SUMMARY

Introductory. I. Marshall and Max Weber on Capitalism, 317. II. The Main Lines of English Social Thought, 321. III. Marshall's Relation to the English Tradition, 330. IV. Economics and Sociology: Marshall's Difficulties, 336. V. Possible Alternatives to Marshall's position; (*a*) Pareto, 339, (*b*) Weber, 343. Conclusion, 345.

In the last issue of this JOURNAL I undertook to analyze Marshall's writings with a view to culling out certain vital elements to be found there which were logically separable from his "organon" of economic theory strictly defined. The outcome of that investigation was the thesis that running throughout Marshall's work is a line of thought which is almost everywhere coördinate in importance with what I have called his "utility theory," namely, his belief in the importance, both ethically and for explanatory purposes, of certain types of activities pursued largely as ends in themselves, and of certain types of character of which these activities are partly the expression, partly the formative agent. Marshall's attitude toward and interest in these activities and qualities of character play a decisive part in determining his position on a number of important problems, both of technical economic theory and of broader scope. Such considerations are among the things involved in his attitude toward Ricardo, his doctrines of the supplies of the agents of production, his views of real cost, his attitude toward laissez-faire, social evolution and human nature.

The present paper will broaden the scope of the discussion by inquiring into the relations of Marshall's ideas to those of other writers. Moreover, having in mind two alternatives to Marshall's own approach to the problems he was interested in, it will discuss his position critically.

I

The issues with which this discussion is to be concerned can perhaps best be raised by pointing out a striking relationship which Marshall's idea of "free enterprise" bears to the doctrines of another recent writer on modern capitalism, Max Weber, who is the representative of a totally different school of thought.[1]

Weber finds the dominant characteristic of modern capitalism in a certain peculiar rationality of the conduct of life, a rationality sharply opposed to the irrationalities both of "traditionalism" and of undisciplined instinct, whim, impulse or sentiment. It is characterized on the part of the individual by a careful systematic planning of his life as a whole and the elimination of all activities inconsistent with such a comprehensive plan. In actual economic life it results in the far-reaching application of science to industrial technique and business organization, the long-time planning of operations, the vivid realization of the future — all serving to make the whole economic organization predominantly into what Weber calls a "bureaucratic" type. This rational bureaucratic organization of modern society is most conspicuous in the economic sphere, in enterprises producing goods for a competitive market. The making of profit and the increase of capital being the common aim of all such enterprises, the system as a whole is most appropriately called capitalism.

But the very impersonality of profit as an aim raises the question of motivation. Is such activity carried on to satisfy individual desires by the expenditure of the profits? Is the rationality of capitalism peculiar only in the perfection with which it adapts means to *universal* human ends? Weber definitely rejects such views. There is nothing natural and universal about the capitalistic way of life such that, given

1. See Max Weber, "The Protestant Ethic and the Spirit of Capitalism," London and New York, 1930. This essay, while containing the core of Weber's theory of capitalism, is only a fragment of the whole, which he unfortunately never formulated in one place. For a fuller analysis of it see the present writer's article, "Recent German Literature on Capitalism: Sombart and Weber," in Journal of Political Economy, Dec. 1928 and Feb. 1929.

favorable external conditions, it will become established of itself. On the contrary it is an entirely unique phenomenon, which has appeared only once in history in an equally unique constellation of circumstances. It is not explicable in terms of the wants which are expressed in consumers' demand, assumed to be given from the point of view of the productive process. Nor is it explicable in terms of wants in the sense of instincts, such as acquisition or workmanship.

Then what does account for it? In its fully developed form the competitive discipline is enough, the system is self-sustaining. Any individual who failed to conform to its rules and ways would be eliminated from the struggle. But selection alone cannot account for the *origin*. The standards of this particular selective process themselves are not universal; they had to originate somewhere. Their origin Weber finds above all[2] in the Protestant Ethic which created a state of mind favorable to such a way of life. Through the idea of a "calling," a task to which every man felt himself to be assigned by divine Providence, economic activities came to be pursued not as means to other worldly ends, but from the mundane point of view as ends in themselves — justified to the individual by their relation to his eternal salvation.

Weber's main emphasis throughout is on the importance of this "ascetic" element in modern economic life, as against the more orthodox view that it is merely the result of "natural" tendencies of behavior, instinctive or hedonistic. His explanation of modern capitalism is in a sense in terms of wants, but not in the same sense as that of utility theory. The "ascetic" aspect means on the whole an inhibition of wants in the latter sense, which, however, greatly favored capitalism because it promoted accumulation. On the other hand the "wants," or perhaps rather values behind the system are expressed directly in economic activities, not in demand; in

2. Of course other conditions had to be favorable. Weber has often been unjustly accused of holding that capitalism was "created" by Protestantism, out of a vacuum as it were. Such is by no means his position.

the system and rationality of conduct, in industry and frugality, in short the "economic virtues."

This suggests some interesting points of correspondence between Weber and Marshall. In the first place, both are agreed that modern capitalism, or "free enterprise" is characterized by a peculiarly high degree of rationality; it is in fact the result of a long "process of rationalization." They are also agreed that, in so far as rationality is a mark of "economic" conduct, the development of capitalism is characterized by an increasing importance of economic factors in social life. Moreover, both emphasize the importance of the economic in another way. Economic development leads to a greater and greater spread of the competitive price system, so that an increasing proportion of men's lives is determined by their relations to it. Weber greatly emphasizes the compulsive nature of competition, while Marshall does so only by implication; it is for him an important agent in keeping up the springs of energy and enterprise. This makes it possible to say that, in a sense, both hold an "economic interpretation of capitalism" tho not of history as a whole.

But in both cases, and this is the most significant agreement, these first two elements, rationality and dependence on the competitive price system, derive their meaning largely from a third factor, Weber's "callings," pursued first for the glory of God, later, with the dying out of the religious motives, as ends in themselves; and Marshall's "activities." For both, especially, the rationality in question is relative to these activities, centering around them as a nucleus. Weber makes the relativity highly explicit, contrasting this form of rationality with many others that are possible. Marshall's conception of rationality is much more absolute, but his ruling out the rational satisfaction of those wants which he calls "artificial" from a rôle in social progress, clearly shows the relation of rationality to activities in his doctrine. With Marshall as with Weber this same element is the basis of the denial that civilization can be understood either in terms of biological instinct, the "wants" which rule the lower animals,

or of "artificial wants" which would be either primarily hedonistic or random.

Moreover Marshall agrees with Weber, and on similar grounds, that the concept of selection is inadequate as a general explanatory principle. Weber's position, cited above, is that while selection[3] can sometimes explain the maintenance of a given social organization once established, it can never explain the origin of the standards of selection themselves. Marshall, in more directly ethical terms, says survival power is the power "to *thrive in* the environment, not necessarily to *benefit* the environment."[4] Given the fact that the development of free enterprise has in Marshall's view meant specifically moral advance, it is quite clear that a process of "benefitting the environment" must have gone on continuously, i.e. that the competitive process has been supplemented by another source of standards.

As will be shown later, Weber's general sociological position is fundamentally different from Marshall's. Hence Weber's scientific motives for studying modern capitalism in the terms in which he did are completely foreign to Marshall.[5] Then whence the remarkable correspondence? The explanation seems to be that Marshall was a living example of the "spirit of capitalism" of which Weber was talking. While he happened to be right about the rôle of certain ethical qualities in modern life, the reason for his ability to see them was not, as with Weber, an extraordinarily wide perspective, but his own deep-rooted belief in them. It was here that Marshall, the seer and reformer,[6] made his contact with Marshall, the scientist. This reforming zeal was at least as important an influence in his life as a whole as his purely "positive" scientific interest.

3. Combined of course with the formative effect of a social environment upon individuals.

4. Principles, p. 596; also Industry and Trade, p. 175.

5. Moreover, any important reciprocal influence is out of the question. It is practically certain that Marshall never read Weber's essay and even had he done so he could not have been greatly influenced by it — the point of view is too different. The main lines of Marshall's views were certainly fixed before Weber's essay was written (1904).

6. See Keynes, Memorials, pp. 11, 12.

Marshall's own ethic was also certainly a derivative of the Protestant Ethic of which Weber speaks. As Keynes tells us "The Marshalls were a clerical family of the West of England" and his father tho not himself a clergyman was "cast in the mould of the strictest Evangelicals."[7] While Marshall himself was a free thinker in his adult life, he retained all the more tenaciously the ethical fruits of his strict religious bringing up. Moreover, he himself ascribed considerable importance to religious factors of the Reformation in "strengthening the English character."[8]

Before going into the difference of sociological views lying back of this remarkable tho unconscious agreement of the two thinkers, it will be best to place Marshall somewhat more accurately in the tradition which formed his intellectual background.

II

In sketching the history of the main currents of English social thought relevant here, I shall confine myself to the period since the seventeenth century; Hobbes and Locke may be regarded as initiating the trends which are of primary interest. A striking feature of the whole tradition in this period has been its predominant individualism, and this in two senses. It has always conceived society to exist for the benefit of independent individuals, and has been profoundly suspicious of any suggestions that the whole was, in almost any sense, superior to the parts.[9] While recent versions of English individualism have gone quite a distance in toning down the more extreme "atomism" of writers even as late

7. Memorials, p. 1.

8. "The isolation of each person's religious responsibility . . . . is a necessary condition of the highest spiritual progress." "The natural gravity and intrepidity of the stern races that settled on the shores of England inclined them to embrace the doctrines of the Reformation; and these reacted on their habits of life." Principles, p. 742.

9. Two of the most prominent English representatives of the theory that "society is an organism," Hobbes and Spencer, have balked at interpreting it in this sense.

as Spencer, they certainly have not abandoned the central position.[1]

More important for present purposes than this ethical sense of individualism, tho generally associated with it, is the more definitely sociological sense. It may be defined as the conception that social phenomena are to be *understood* primarily in terms of the essentially independent actions and properties of individuals pursuing ends in the last analysis private to themselves, so that the "social" is conceived as a resultant of the various forces of individual activity.

The great controversies of English social thought have not been concerned with the validity of this general individualistic position but with differences which have arisen within it. In order to show this it will suffice briefly to state the issues at a few main stages.

The first stage is the conflict between Hobbes and Locke. Both are social contract theorists, thinking of social bonds as existing for the satisfaction of individual desires alone. In particular the state and its authority is only a means, a necessary evil. The main difference lies in their interpretation of the rôle of reason. For Hobbes it is the servant of the "passions" which are thought of as essentially unlimited and independent of each other.[2] The full satisfaction of the passions of any one individual is hence incompatible with an equal satisfaction for others; they must be forcibly restrained or the result is the war of all against all, the reign of force and fraud. Locke reverses the relationship; reason rules the passions. Man is not only rational, but "reasonable"[3] and there is no

1. See especially the works of the late Professor Hobhouse. His Metaphysical Theory of the State remains the classical English refutation of Idealist Social Theory. The latter cannot be said ever to have gained a real ascendancy in English social thought, tho perhaps it has come nearer to that in official philosophy.

2. Hobbes can hardly be made out to be a modern "survivalist." The desire for self-preservation dominates the others merely because it is inconceivable to Hobbes' "practical" mind that any one should set other values above life itself.

3. For Locke this was because men were reasonable. The position was, however, open to another interpretation in terms of a moral instinct implanted by nature, so that it was nature, not man, which was reasonable.

essential disharmony of the desires of individuals and life in society. Authority is not so necessary and can be challenged without such great risks to security. Force and fraud are suppressed primarily by the reasonableness of the individual, not by external authority.

In rather different terms similar issues reappear in the controversy between the Malthusians and classical economists on the one hand and the optimistic radicals like Godwin and Owen on the other. Malthus emphasizes, not the plurality of warring passions that Hobbes does, but one specific passion, the "tendency to reproduce." This change shifted the scene of the major disharmony from the conflicting passions of individuals to the relation of man to natural resources. This really involves a radical difference from Hobbes; the classical economists hold that the pursuit of self-interest does not lead to a war of all against all, but is the principal agency in mitigating the evil consequences of the principle of population. This position assumes that force and fraud are ruled out of individual competition by improved morality rather than by the strengthening of authority, and is in so far like that of Locke, and again Marshall.[4] At this stage it is hardly possible to speak of radical anti-intellectualism in spite of the difference of opinion on the scope of reason. The Malthusian objection to Godwin is that reason cannot easily control the sexual appetite, but no one denied at least an important "instrumental" rôle to reason, especially in the economic sphere.

So far English individualism had had a predominantly static character. It thought in terms of an equilibrium adjust-

4. The utilitarians still further modified Hobbes' position by their doctrine of sympathy, which is in turn associated with a general leaning to biological environmentalism. Through association the good of others may come to give pleasure to any given individual and hence altruism is not inconsistent with hedonism. Furthermore sympathy may help to account for social cohesion under conditions of laissez-faire, while Hobbes could only derive it from the coercive authority of the sovereign. The scope of the doctrine, however, was strictly limited by the individualism of the utilitarians. The "good of the whole" of social utilitarianism is a very different thing from the analogous conception of Rousseau or Hegel. The other factor of social cohesion at this stage was economic interdependence through the division of labor.

ment to fixed factors; the external environment, human passions, the standard of living. When the idea of evolution came into English thought with Darwinism, the particular form it took involved a minimum of modification of the existing tradition. Darwin himself was of course influenced by social thought, particularly by Malthus, but at least indirectly by Hobbes also. Indeed the resemblance of the Darwinian conception of nature to the conception of society of the classical economists was so close that Keynes has remarked "the principle of the Survival of the Fittest could be regarded as a vast generalization of the Ricardian economics."[5]

But there was a new element in Darwinism, the conception of random variation. Instead of the selective process merely keeping numbers down to protect a static standard, the process is dynamic. Indeed it is only this element which makes Darwinism an evolutionary doctrine. One of its principal applications to the social sphere lay in permitting a synthesis of the old pessimistic individualism of Hobbes and Malthus with a new optimistic philosophy. The war of all against all, the process of elimination, is not to be regretted, since after all only the unfit are eliminated and the whole movement is one of progress. On the other hand the "reasonable" tradition, when it adopted the doctrine of evolution in a biological sense, tended to Lamarckian environmentalism, and in a social sense to the conception of active adaptation through collective mastery of the external environment. Indeed if men are really "reasonable" why should there be any necessity for a struggle; if environment forms human beings directly why should there be any unfit to eliminate?[6]

It is noteworthy that where the doctrine of evolution was applied to society by this kind of thought it has been in terms of a continuous unilinear process. The result is by no means

5. The End of Laissez-Faire, New Republic Edition, p. 17.

6. Spencer represents a curious mixture of these lines of thought. On one hand he was the original coiner of the phrase "survival of the fittest," on the other, a believer in the inheritance of acquired characters.

arbitrary; it is a natural result of the whole structure of these theories. Why?

The social theories under discussion have been characterized by the attempt to explain human society in terms of objective scientific factors, which are stable and easily verified. In this regard the most obvious are the conditions imposed upon man by the external environment. If its influence can be pushed far enough almost all the highly complex problems of human motivation can be pushed to one side. Only one "motive" need be postulated: survival. Given this one "motive" all human actions can be explained as resulting from the necessity of meeting the inexorable conditions of survival. This view may be called "survivalism." Suggestions of it may be found in Hobbes, in the dominant rôle he assigns to the passion for self-preservation. It is much farther developed in Malthusianism, at least of the more drastic variety. One dominant urge, the tendency to increase, being postulated, the hard necessities of the subsistence problem account for everything else.[7] To be sure the doctrine was modified by elements summed up in the conception of the standard of living; and the interpretation of the effects of competition as relatively beneficent in maintaining a standard also involves other elements. But such disturbing elements may be found in almost any body of thought and do not alter the main outline.

This becomes a truly evolutionary doctrine only by introducing the Darwinian conception of variation as underlying that of selection. In its social application the new element assumes social variations also to be random and to be submitted equally to the selective exigencies of the external environment.[8] The leading idea is that of adaptation, becom-

7. An excellent illustration of the way in which conviction of the importance of a biological factor can divert attention from other problems is Mill's treatment of wages. The population problem so dominated his mind that he never even attempted a thoro analysis of the demand for labor, since it made no difference after all. (I am indebted to Professor Taussig for this suggestion.)

8. The whole line of thought uppermost in this "Social Darwinism," is closely identified with the "scientific" aspects of the doctrines of Natural Law. Its emphasis is on the inexorability of social determinism.

ing progressively better by virtue of the element of variations. Another version of the same concept, associated with Lamarckian environmentalism in biology, is the idea of rational adaptation in society, often repudiating competition in favor of spontaneous coöperation. The two versions differ only as to the process of adaptation; since the really decisive factor, the environment, is the same in both cases, the end result is also the same.[9]

A certain broadening of the point of view takes place when, on the "human" side of the equation, not one all-pervading aim — survival — is assumed, but a multiplicity of wants. Then the external environment retreats into the rôle of a limiting condition and the center of the sociological problem becomes that of the choice of means to satisfy as large a quantity[1] of these wants as possible within the limitations imposed on the one hand by the environment, on the other by the potential conflicts of individuals with each other. This is the view which seems to be dominant in Hobbes, in spite of the rôle he assigns to self-preservation, and certainly is so in Locke. The principal difference between them lies within these limitations — in their estimation of the seriousness of the possibilities of conflict, and hence of the rôle of the principal agency in the prevention of conflict, the state. This doctrine may be called sociological "liberalism."[2] Its essen-

The other line of thought derived from Locke is tied up with normative conceptions of Natural Law. See the two articles by O. H. Taylor, Quarterly Journal of Economics, February and May, 1930. I am much indebted to Dr. Taylor, both his articles and his conversation, for clarification of many points both in the history of English social thought and in Marshall.

9. This emphasis on the "objective conditions" is a perfect example of what W. Koehler (Gestalt Psychology, Ch. II) calls "mechanistic theory." It avoids all "dynamic" problems by explaining phenomena exclusively in terms of what Koehler calls "topographical conditions."

1. Such a theory necessarily requires a quantitative standard of want-satisfaction. Since "utility" is the only satisfactory one ever discovered, this "sociology" has always been closely associated with economics.

2. This is of course not to be confused with political liberalism, tho it is one of the doctrines underlying it. It and the view called "survivalism" above may be united to form what may be designated sociological "individualism." I use the term "liberalism" only in default of

tial feature is that it simply assumes individual wants as given without attempting to justify or explain them. It remains strictly scientific in so far as it follows this course. In this sense Bentham was quite correct and consistent in his insistence that from the viewpoint of utilitarianism "push-pin is as good as poetry," if the individual happens to think so. The most consistent form of the doctrine, utilitarianism, so long as it sticks to this position, is a scientific account of human action, and, so far as it claims to be a complete account of it in society, a sociology.

So far as "liberalism" has simply assumed the wants of the moment as given[3] it has remained a strictly "social" doctrine. But there have frequently been attempts to search further for *universal* tendencies of action underlying momentary wants which have naturally ended in a psychological interpretation of social phenomena, in "psychologism." In this sense the passions of Hobbes and the pleasure[4] of utilitarianism are psychological conceptions. Finally a still further reduction of "wants" to those fundamental biological urges related to survival tends to reduce the doctrine to a biological one.[5] Between these steps there are of course all conceivable gradations.

Both "survivalism" and "liberalism," if taken to be the final and ultimate accounts of human life, may be considered as ethical doctrines; if they are the ultimate *scientific* accounts

a better. It is more liberal than survivalism because it leaves an important margin of variation to individual wants.

3. This naturally does not exclude the use of relatively general types.

4. The economic conception of utility can scarcely be called psychological as it refers at most only to the immediate, not the ultimate motive of an act of choice. It is important to distinguish it from "pleasure."

5. F. H. Knight, Ethics and the Economic Interpretation, Quarterly Journal of Economics, 36; 1921–22, 469, remarks that "modern Pragmatism (and some versions of Utilitarianism) runs in terms of the twofold assumption that the Good is identical with both the biologically beneficial and the actually desired." It may do so, but the two assumptions need not go together. Both tend to make of sociology as well as ethics a "glorified economics." I am much indebted to this article by Professor Knight and the sequel to it, "The Ethics of Competition," for many stimulating ideas which have influenced the present study at too many points for separate reference.

of man in society they are sociologies, tho they may be systems of ethics as well. If they accept a doctrine of evolution at all, it is necessarily continuous and unilinear, as in both cases there is a single goal toward which the process tends;[6] and no logical break in the process. In both cases also a scientific doctrine of "progress" is possible, for the goals are objectively fixed and the process of social change, whether by selective or rational adaptation, or want-satisfaction, moves inevitably[7] toward them.

There is one other ground on which a unilinear theory of social evolution is possible. If, namely, survivalism is rejected and human desires are not simply taken as ultimate, but qualitative distinctions are made between them, if poetry is held to be better than push-pin, the process of evolution may be thought of as leading to the development and realization of the "higher" at the expense of the "lower" desires or values. But for the unilinear direction to be given there can be only one set of "higher" desires, or a fixed scale from lower to higher. On the other hand the introduction of this element brings with it the possibility of a struggle of man with himself, of "temptation" which had no place in the other two frameworks, and which lends an aspect of uncertainty to the whole process.

There has been one other movement in English thought which needs a brief word here: anti-intellectualism. The way to it may be said to have been opened by the Darwinian movement. The activities (resulting from variations) which it supposes to form the raw material of selection need not be rationally directed to given ends, they might be wholly random or instinctive.[8] There has since been a widespread questioning of even Hobbes' limited conception of the rôle of rationality, the two most conspicuous forms of which are

6. In the one case adaptation to environment, in the other, satisfaction of desires.

7. Since there is no possible motive for human beings to make choices which would lead away from the goal, except as "errors" which would be random and not predominate in any one direction.

8. For strict Darwinism even instincts must originate in random movements.

behaviorism and the instinct psychology. But the conspicuous fact about anti-intellectualism in England and America has been that the repudiation of reason has taken place in favor of biological or psychological factors, and has thus served merely to strengthen the already powerful tendency to bio-psychological interpretations. The anti-intellectualist has turned to the reflexes and conditioned reflexes of the behaviorists, to the instincts of McDougall, or to some related factors. We have never produced an important *sociological* anti-intellectualism such as has appeared on the continent of Europe with the work of Pareto.

Let it be stressed again that the strong tendency to biological or psychological interpretations of social life is a natural result of the sociological individualism of English social thought; it tries to get down to the fundamental nature of that individual who is the basic unit of society, and of the external environment he lives in. In so far as it has not done so, the main emphasis has been thrown on economics. For "orthodox" economic theory has been concerned with a rational process of individual want-satisfaction, the wants being considered as given.[9] If that assumption was made not merely for the limited methodological purposes of economic theory, but as a basic postulate of social theory as a whole, and combined with the general belief in rationality, the inevitable result was to make economic theory the central element of social thought. This position was still further reinforced by the incorporation in a great part of the tradition of the egoism of Hobbes' natural man, which put strong props under the competitive aspect of classical economics. To be sure there were elements which did not readily find a place in this structure, such as the standard of living, but they tended to be simply taken for granted, without further inquiry into their origin.[1] With the double advent of the doctrine of evolution and the emphasis on elements which did not fit into

9. They need not be in fact absolutely constant, but must be considered as data from the viewpoint of economic science. It is the relative independence, not the fixity of wants, which matters.

1. Which is the same as saying they are outside the scope of the science in question.

this general scheme such as "custom" and the rôle of irrational instinct and impulse, it was easy to project such elements back into the past as characteristic of the primitive stages of development, and look upon the evolutionary process as one of emancipation from them through the development of reason.

III

What has all this to do with Marshall? He fits admirably into certain elements of the tradition. He is, in some respects, as thorogoing an individualist in the sociological sense as any of them. He certainly accepts the general postulate of rationality of human action, tho in accordance with his evolutionary doctrine he makes it a growing rationality at the expense of the dominion both of custom and of irrational impulse. He was not appreciably influenced by the anti-intellectualist movement, which is but natural since that movement has only grown to large proportions since his formative period. Nevertheless there is one striking point where Marshall does not fit into the tradition, his treatment of wants.

It is quite clear that he did not think primarily in terms of biological "survivalism." That would be entirely inconsistent with his categorical denial that civilized men were the creatures of "wants" in the same sense in which he considered the lower animals were. His general refusal to ascribe very great importance to the influence of external environment is further evidence.

Nor was he mainly an adherent of a psychological interpretation. To have been one in the anti-intellectualist sense would have contradicted his belief in reason. He was certainly not a consistent adherent of the natural egoism of Hobbes. The most current psychological theory of his formative years was utilitarian hedonism. In spite of the fact that, as Keynes points out, he never explicitly rejected it, it has been shown in my first paper that he could not have been primarily a hedonist.[2] Nor, finally, could he have been a strict "liberal"

2. The evidence for this statement need not be repeated here. It is true that Marshall not only did not explicitly repudiate hedonism, but retained a sufficient hold on it to give plausibility to the view that this

in the above sense. His very refusal to take man's wants for granted as data is sufficient proof. But further his category of "artificial" wants would be quite illegitimate from that point of view. He refused to recognize that push-pin was as good as poetry. What then was his position?

It is clear that what differentiates him from any of the doctrines just outlined is his insistence on the importance of activities and the development of faculties, in connection with the wants "adjusted to" or created by them. It is their adjustment to activities which distinguishes this kind of wants from either "artificial" wants or biological needs. They and the activities adjusted to them refuse to fit into any of the above categories. Given the rôle of activities, it is Marshall's belief in their absolute nature which makes him an adherent of the doctrine of unilinear social evolution. He does not even consider the possibility that evolution might lead in any other direction than the development of his particular set of activities and qualities of character. All phenomena differing from his free enterprise are interpreted as stages in its development. If they exist contemporaneously they are arrested stages, their adherents are "backward" peoples.[3] Even socialism is not a step *away* from his line of progress, but one *backward* along it, into sluggishness and stagnation.

was the keynote of his whole thought. It is easy enough to quote hedonistic statements from his works. The only way of refuting such a view is by considering the structure of his thought as a whole. With that in mind I have no hesitation in saying that hedonism was a subsidiary rather than a major current in his thought. When hedonism and the rôle of activities are brought face to face, as in the attitude toward Jevons and toward "artificial" wants, it is always hedonism that gives way.

3. One of the best examples of Marshall's attempts to fit difficult cases into his scheme is to be found in what seems to be the solution of a puzzling problem of interpretation. I have already pointed out (in the first paper) that, while Marshall does not in general greatly emphasize the rôle of external environment, there is one striking exception: he repeatedly insists on the debilitating effects of hot climates; they sap the springs of energy and make for sluggishness. Why does he make the exception? I think he had primarily the case of India in mind. Because of his absolute belief in his activities, he was blind to the possibility that Indian civilization might be simply *different* from

But does Marshall really depart radically from the intellectual tradition in which he grew up? He has been said to have been influenced largely, so far as I know, by only two other traditions than that sketched here: by Hegel[4] and by the German Historical School.[5] It is true that certain elements of Hegel were congenial to him, but even where there is a superficial likeness it covers up a deeper difference. Moreover, what is still more important, the elements of Hegel which have been most decisive in influencing subsequent German thought, have left scarcely a trace in Marshall. His idea of evolution is *continuous*, not dialectic. Both the (logical) discontinuity and the element of conflict, the two primary elements of Hegelian evolution, are missing from Marshall. Instead of emphasizing the historical uniqueness and discontinuity of past economics systems, Marshall sys-

European, guided by different ideals. He tried rather to find a place for it in his evolutionary scheme. The Indians are obviously an intelligent people; so their failure to develop free enterprise cannot be due to innate stupidity. It must be ascribed to some arresting agency which he thinks to find in the climate. India is not essentially different from Europe, but an arrested stage in the same process of development. The Indians belong to the "more ignorant and phlegmatic of races." (He also had a certain tendency to minimize the differences: see his continual statements that there is more operation of "economic forces" in India than is generally supposed.)

It is interesting to compare this with Max Weber's view, expressed in his study of the social implications of Hindu religion (Religionssoziologie, vol. ii, p. 133) "The belief that the Indians are characterized by a 'sluggishness' which is the result of the climate, and that this explains their supposed aversion to activity, is wholly without foundation. No country in the world has ever known such continual and savage warfare, such ruthless conquests, subject to so few limitations, as India." In view of Weber's totally different sociological approach it is not surprising he should come to the diametrically opposite conclusion from Marshall. That makes their agreement on capitalism all the more significant.

4. See Keynes, Memorials, p. 11, and Marshall himself, Principles, Pref. p. ix.

5. For his attitude to this school see "The Present Position of Economics," Memorials, pp. 152 ff. Right as Marshall is in his criticism of them in terms of economic theory, he misses some of their broader aims. By the same token they were wrong in trying to bring those aims into conomic theory as such.

tematically minimizes them.[6] This separates him sharply from Hegel, Marx, and their successors. Marshall's low opinion of Marx is in itself sufficient proof of his lack of touch with the essence of the Hegelian tradition. He took from Hegel only what suited his own preconceptions, and used it only to round off the sharp edges of his own tradition — as in his idea of the "organic" nature of social change.[7]

Essentially the same is true of his relation to the Historical School, which was in turn closely related to Hegel. He used that School primarily to emphasize explicitly the importance of the historical relativity of institutions and customs, and hence of the study of economic history. This did indeed mark a change from some of his predecessors, but he interpreted this relativity in terms of his own doctrine of social evolution. His doctrine was by no means the radical relativity or the absolute logical independence of historical epochs toward which the historical school was tending, *Historismus*. Marshall's differences from the leading legitimate heir of the historical school today, Sombart, bring that out clearly. The influences which shaped Sombart's thought cannot possibly have been decisive for that of Marshall.

The fact of the matter is that Marshall accepted the fundamentals of English thought, with one exception: he made room for the element of activities by widening the scope of economics to include it. That widening was not arbitrary, but was the only way to deal with it without splitting open the whole conceptual framework of his inherited tradition. For this tradition included, as has been shown, three main elements, or alternative explanatory principles. There was the "survival" principle, acceptance of which would reduce

6. As in his treatment of Mercantilism.

7. See Mechanical and Biological Analogies in Economics, Memorials, pp. 312–318. "Progress or evolution, industrial and social is not mere increase and decrease. It is organic growth." Memorials p. 317 "Economic problems are imperfectly treated, as problems of statical equilibrium and not of organic growth." Principles, p. 461. It is evident that he linked this "organic" idea with his activities. "Organic" growth is the simultaneous development of wants adjusted to activities, of the "standard of life"; a rise in the "standard of comfort" on the other hand is not organic growth.

social science to applied biology. Marshall rejected that view decisively. The alternative was the "liberal" view. One interpretation of it, the "psychologistic," Marshall also decisively rejected. It would have meant assuming a constancy of human nature which was inconsistent with his view of the progressive development of character. The only thing left was the "liberal" view shorn of psychological implications; the simple assumption that men acted rationally in the satisfaction of their wants, whatever they might be. Marshall's course was to fuse his doctrine of activities with this element, with utility theory, to form a broader economics. The element of rationality caused no difficulty in effecting the fusion, since for a narrow rationality of action in the service of any wants which happened to exist he could substitute a broader conception which included the element of activities. Moreover the particular activities Marshall was interested in happened in themselves to be highly rational. The most radical alteration his position did involve was in abandoning the constancy, or the purely random nature, of wants, and discriminating between those which were "adjusted to activities" and those which were merely "artificial." The latter category was virtually left out of consideration, or pushed back into the earlier stages of social evolution and doomed to be progressively eliminated, while the former formed an indissoluble unity with the activities, obeying a particular evolutionary law.

At the same time factors in the social equilibrium other than this broadened economic factor become distinctly subordinate. Geographical and bio-psychological factors become limiting conditions, while other specifically social factors, such as custom, force and fraud, religious and other ideals, so far as they cannot be incorporated into the economic factor as Marshall understands it, are relegated to that vague general background the gradual emancipation from which is the essence of the process of social evolution. They are obstacles which must be overcome in the forward march and play less and less of an independent rôle. Thus, as I have already remarked, Marshall has what may be called an economic

interpretation of free enterprise, tho not of history as a whole. One aspect of evolution is the increasing predominance of the economic factor; it enlarges to such an extent that the others recede eventually into a very dim background.

The most important result of Marshall's attempt to fit his interest in activities into his intellectual tradition is the implicit thesis that the development of his activities is the central element in the process of social evolution as a whole. Englishmen have often ridiculed Hegel for supposing that the evolution of the *Weltgeist* had taken place solely for the purpose of producing the Prussian State of the early nineteenth century. And yet Marshall, good Englishman that he was, supposes that the whole process leads to the production of the English business man and artisan of the latter part of the same century. With all due respect to those worthy gentlemen, does anyone really suppose that they alone will inherit the earth? I am not here concerned with disputing the validity or propriety of Marshall's ethical conviction of the supreme value of one type of character. What is important is whether such subjective ethical convictions should be allowed to color the whole perspective of the past and present tendencies of social development as it undoubtedly does in the case of Marshall. The complete disregard of most other things which it entails is a narrowmindedness hardly compatible with the ideal of scientific objectivity.

Furthermore, Marshall must be held open to the charge of treating such highly controversial views as if they were mere commonplaces. It takes considerable effort to discover merely what he means to say and much more to grasp the implications. As I have remarked several times before, Marshall explicitly refuses to consider those implications himself. But this study will have served its purpose if it has shown that he cannot be interpreted otherwise than as taking a position of the highest importance on the fundamental questions he professes to ignore. I am tempted to regard his reluctance to recognize that fact as a symptom of a certain

evasiveness in Marshall's scientific character.[8] The truth is these basic ideas of his are very far from being commonplaces; they are in need of the most explicit justification, if indeed they are tenable at all.

IV

I now come to what is, from a scientific point of view, the most important stage of the argument. Marshall puts forward the views which have been under discussion in these two papers under the rubric of economics. They involve, however, implications for his conception of the whole social process so broad that it is justifiable, even tho Marshall himself would have repudiated the suggestion, to regard his body of "economic" thought taken as a whole as a sociology. While he thought he was avoiding anything beyond legitimate economic analysis, and even held that, at least in his day, a science of society as a whole was not attainable,[9] he did not succeed in avoiding the wider problems. The only trouble is that his treatment of them is unsatisfactory.

It has been shown, I think, that his position follows not unnaturally from that of his predecessors. They really left only the alternative that sociology was either applied biology or psychology, or that it was simply economics in the sense of utility theory. In so far as utilitarianism represented the "liberalism" sketched above, freed from hedonism, it was a sociology which consisted solely of a universal application of economic theory in the "utility" sense. As compared with any of these, Marshall's position, regarded as a sociology, is a distinct advance. He is able to account for a group of phenomena which are of great importance, but have no place in any of the above frameworks.[1] So much must be said for

8. See Professor Taussig's obituary note of Marshall, Quarterly Journal of Economics, Nov. 1924. The same evasiveness which Professor Taussig here finds characteristic of Marshall's attitude toward social problems can, I think, be extended to fundamental scientific questions.

9. Principles, Appendix C, p. 770.

1. By virtue of their principles, of course. As "human beings" the holders of such theories may have insight into such things. Fortunately we do not always live up to our principles.

him in spite of the difficulties of his position. But is his widening of the boundaries of economics to include the study of activities and character a service to economics? To be sure it places the phenomena studied by utility theory in a wider perspective and hence gives a more correct total view of them. But this may not be the best way of gaining such a perspective. Is not the perspective which Marshall gains on the process of want-satisfaction more than counterbalanced by his conspicuous lack of perspective on the activities themselves? From the above analysis it must be concluded that the main lines of Marshall's treatment of activities, in so far as it is more than a bare recognition of their importance, results from its assimilation to the tradition of English economics. Only a separation can avoid Marshall's difficulties.

But how can this separation be brought about without losing sight of the importance of the activities? Marshall is quite right in holding that they cannot adequately be dealt with in terms either of a biological struggle for survival or of a study of human nature. The character in which he is interested is not an inborn trait of man's biological or psychological nature; it is socially conditioned. In part no doubt it is economically conditioned. But Marshall is committed from the start to the view that it is best studied as part of the system of economic[2] equilibrium. The only remaining alternative seems to be to turn its explanation over to a still wider science: sociology. But there is a sense in which it can be said that the whole English intellectual tradition of which Marshall was a part had no place for sociology.[3] Within the

2. In his wide sense, of course.

3. Of course if sociology means simply the science of society as a whole, comprising a study of all the factors bearing on society in whatever manner in its specific subject matter, it is out of the question that there should be no place for it; but that does not make it an independent science. On the other hand, if the central subject-matter of sociology be limited to the *social* (or "cultural") factor, as I prefer to do, it is quite possible to dispute its independent existence on the ground that its alleged subject-matter does not exist except as a resultant of factors already adequately treated by other sciences. The quarrel here is analogous to that over the question whether biological phenomena are reducible to applications of the laws of physics and chemistry. I am quite aware that the similar denial that social phenomena are reducible

scope of that tradition the only phenomena not specifically explicable in terms of the principles of non-social sciences, biology and psychology, are those ordinarily understood as economic — the rational pursuit of individual want-satisfaction. But by sociology I should mean a science which studies phenomena specifically social, those arising out of the *interaction* of human beings as such, which would hence not be reducible to the "nature" of those human beings. The biological and psychological factors would assume the position of limiting conditions, knowledge of which might be of great importance in understanding any *particular* concrete problem but which would not be a part of the specific logical subject matter of sociology.[4] Economics, on the other hand, would be a part of sociology dealing with one aspect of social phenomena, which would need to be supplemented by other sociological factors before it could give adequate solutions of concrete[5] problems. Does such a science exist at all? What would be the position of economics within it? Above all how would it deal with problems such as those Marshall tried to solve by his treatment of activities and character within the framework of economics? Is it capable of dealing with types of "activities" which cannot be so easily assimilated to the conceptions of a narrower economics as those of Marshall? The starting point of this final stage of the inquiry is the recognition that the universal importance which Marshall attaches to *his* activities cannot be founded in the facts alone; it is at least partly a matter of the perspective imposed by his sociological framework and can only be escaped by altering that framework.

to applications of biological and psychological principles involves a philosophical stand. It is ultimately the character of English philosophy which is at the basis of the whole position which shuts out sociology in this sense.

4. That is, would form data, not problems, for sociology.

5. Concrete again only in a relative sense. The understanding of completely concrete phenomena, so far as they are accessible to science at all, would involve application of the principles of *all* the basic sciences.

V

It is fortunately not necessary to venture into entirely unexplored territory in order to show that a way out of Marshall's impasse is possible. Let us here consider two[6] general conceptions of the scope and problems of social science, and of the relation of economics to sociology which offer an escape from his difficulties. I choose these two, Pareto and Max Weber, not because I wish to hail them as the only possible alternatives to the "Anglo-American" tradition of which Marshall forms a part — whether they are cannot be decided within the scope of the present study — but because they both have a peculiar relevance to Marshall's problems.

The anti-intellectualist movement and its relation to Anglo-American social thought has already been touched upon. Pareto is the most eminent sociological representative of the movement in continental Europe; the revolt against exaggerating the rôle of reason may be considered his starting point. He, however, has escaped the predominant tendency of Anglo-American anti-intellectualism to psychologism and survivalism; hence for present purposes his doctrine is to be differentiated sharply from the latter.

6. In many respects the American "institutionalist" movement is deserving of a place in this discussion. As is quite evident from the way in which the problems with which the present study deals were put, the controversy between the orthodox and the institutionalists has played a decisive part in the development of the position presented here. I do not include an explicit discussion of it for two reasons: because it is impossible to do justice to the complexity of the issues in the space available, and because I do not consider institutionalism a genuine solution of Marshall's predicament, while I do so regard the positions both of Pareto and of Weber. On account of limitations of space the close of the present discussion must be concerned with pointing to satisfactory ways out rather than warning against false paths. It must suffice to say here that the institutionalists are even more open than Marshall to the charge of failing to consider the basic implications of their position. In so far as they do not repudiate theory altogether, which is fatal, they tend to fall back into the "psychologism" and "survivalism" which Marshall successfully avoided. It is clear that a *sine qua non* of a position satisfactory from the present viewpoint is immunity from such tendencies. This does not mean, of course, that many of the institutionalists' criticisms of the orthodox, especially the more dogmatic of the latter, are not well taken.

Pareto, as the leading representative of the "mathematical school" of economics, made important contributions to economic theory.[7] It is interesting to note that, however much his theoretical system differs from that of Marshall in form, in substance it is very similar to what I have called the latter's utility theory. It was, on the other hand, a keen realization of the inadequacy of economics in this sense for the understanding of concrete social phenomena which led Pareto finally, in his old age, to formulate a whole system of sociology.[8] Its beginnings are to be found in his work on socialism;[9] and it is to be remarked that tho he did not devote a special work to the problem of protectionism this occupied a large place in the development of his thought.[1]

Pareto defined economics as the science of "logical" action — what I have called "rational"— as opposed to "non-logical." He is insistent that "non-logical" is not necessarily "illogical" from the point of view of the outside observer. His criterion of "logical" is the correspondence of the subjective with the objective end of a given act. By thus tying logical or economic action up with the existence of a subjective end, a "want," Pareto cuts himself off sharply from any economic "behaviorism"; for the behaviorist by categorically denying the relevance of the "subjective" to his scientific problems, has no possible means of distinguishing the logical from the non-logical when the latter is not illogical. Thus, for Pareto, economics is the study essentially of the logical — or rational — process of the satisfaction of "wants" (*goûts*) in so far as that is permitted by the "obstacles," the cost factors, whether they be scarcity of natural resources, disinclination to work, or to save, or anything else.[2] Pareto

7. In his Cours d'économie politique, 2 vols., 1896; and Manuel d'économie politique, 1906.

8. Traité de sociologie générale, 2 vols., 1917–19.

9. Les systèmes socialistes, 2 vols., 1902.

1. In both cases his problem was to explain why men acted counter to the deductions of pure economic theory, which sees in harmonious coöperation of the factors of production the way to maximum satisfaction, and in protection a necessary destruction of wealth.

2. By thinking in terms of "obstacles" Pareto intentionally avoids the

studies the economic process in terms of a general equilibrium theory. The "wants" are definitely taken for granted as ultimate for economic purposes. At the same time force and fraud are ruled out, partly because of the dominant part played by deliberate choice on the part of consumers. But since consumers, and sellers, choose between the alternatives actually open to them, the exercise of economic "power" is not excluded.

But, as Pareto insists throughout, this economic theory is abstract. It deals only with certain selected elements of social life, and before being applied to any concrete problem needs to be corrected by the reintroduction of the elements from which abstraction was made. A systematic study of the more important of those other elements forms the principal content of his sociology. In formulating it he takes his departure from a study of non-logical action. He distinguishes two fundamental elements which are involved; the professed motives of action (values, ideals, and the like) which he classifies as "derivations," and which he finds to vary enormously; and, more constant than they, certain more or less universal tendencies of action which he calls "residues." It is important to note the great caution with which Pareto defines the "residues." They are simply the relatively constant factors in non-logical action. He is particularly careful not to identify them with instincts. The residue is not a psychological but a sociological conception. They are not constant attributes of an abstract human nature but relatively constant tendencies of the behavior of human beings *in society*. It is change in the residues and their combinations which primarily accounts for social change, tho of course that change may be due to the changing composition of a population with respect to hereditary type, as well as to change within the same hereditary type[3] due to social influ-

morass into which Marshall fell on the question of real cost. In effect he limits it to opportunity cost.

3. Moreover the standards of the selective processes by which the biological composition of a population changes are partly social, not biological-environmental alone. Pareto, like Marshall and Weber, sharply repudiates what he calls "social Darwinism."

ences. It is this position which marks Pareto off from "psychologism."[4]

His anti-intellectualism appears in the general contention that the residues far outweigh the derivations in importance, tho he is careful not to exclude the latter from some rôle in the social equilibrium. Finally besides these two factors, and the economic, Pareto lays great stress on the fact of social stratification and the processes of selection by which the composition of the higher layers, the élite, and their relation to that of the lower are determined.

Had he discussed Marshall's activities and character Pareto would probably have ascribed them primarily to a particular combination of residues, partly perhaps influenced by past derivations of a religious nature. This would be a combination which gave a specially large importance to economic, or logical action. Its rise to predominance Pareto would explain in terms of a particular process of circulation of the élite which favored this type. But these phenomena would be placed in a very different general framework from that of Marshall. Instead of being the one combination favored by the historical process as a whole, it would be only one of a large number of possible combinations. Pareto is not committed by his methodological position, as Marshall is, to one special type of unilinear evolutionary process leading to the progressive elimination of certain factors of social causation. On the contrary he brings about a very convincing reinstatement of some of those factors, notably force and fraud. Moreover, so far as he has any theory of the historical process as a whole, it is not Marshall's unilinear evolution but a succession of never-ending cycles of change. That doctrine, receiving as it does a notable revival in Pareto's work, is a measure of the radicality of his departure from the tradition which has been under discussion here. Thus Pareto, while he would be able to find a place in his scientific scheme for

4. In this sense he is an "environmentalist." But biological environmentalism simply opens the door for sociology. It is the positive solution of sociological problems within that leeway which is his real contribution.

Marshall's problems, commands an immensely widened perspective which enables him to escape the provincial narrow-mindedness of which Marshall is guilty.

The other alternative conception to that of Marshall which I wish to consider is Max Weber's. Weber is a true representative of the main currents of German social thought, which never has been very closely related to that of the Anglo-Saxon world. The central interest of Weber, as of Pareto, was in "economic" problems, the explanation of the phenomenon of modern capitalism. But as he soon realized that economics alone is incapable of solving his problems, he pushed further on to develop a science of sociology. The motivation of the two men in undertaking this task was strikingly similar.

Their conception of economics is also very similar. Weber makes it the science which studies human actions in so far as they are directed toward the acquisition of utilities (*Nutzleistungen*).[5] So far, like the British and Pareto, by defining economic action in terms of its subjective aim, he radically repudiates economic "behaviorism." But, in accord with Pareto, he denies that this means basing economics on psychology. Utility here refers only to the actual end of action, the motive of concrete choices, not to the ultimate psychological "drives." Economic action is moreover in principle rational, tho it may in practice be tinged with traditionalism or other non-rational factors. But it is not the whole of the rational. It does not at all include one of the fundamental types of rational action, that concerned with putting ultimate values directly into practice (*wertrational*). It concerns only action in the service of limited finite ends, and not even all of that. The use of force, even tho it be rational, is excluded, as is "technique."[6] On the other hand the ends which are com-

5. See Wirtschaft und Gesellschaft, Ch. II, p. 31.

6. Technique is concerned solely with choice of means for unmistakable ends, while economic action is concerned with comparison of and choice between immediate, tho not ultimate ends since the latter cannot be "weighed." Weber's conception of economics clearly includes the

pared are taken as data. The explanation of their origin is not the task of economics. Non-rational action is understood largely in terms of its deviation from rational types.

For present purposes the most important non-economic category of Weber's sociology is that of action in direct pursuit of ultimate values (*wertrationales Handeln*). The conception is a leading one in the whole line of thought of which he is representative. It implies that not merely individuals, as the sociological "liberal" might admit, but historical epochs and cultures are characterized by the predominance of sets of ultimate values which form an essential element in the understanding of the social phenomena connected with them. Besides this category he adduces others of a non-economic nature; emotional determination, force, tradition, which do not necessarily involve recourse to bio-psychological explanations. Nevertheless it is the specific rôle of "values" which is characteristic of German Sociology. They may be wholly independent and logically unconnected, as for Sombart and Spengler, or connected in a dialectic process as for Hegel, or Marx, or they may form the main differentiating elements in a branching-tree conception of social development, as for Weber. In any case they introduce a highly important element of relativism into sociology. They encourage the conception of a society dominated by such a system of values as a closed, complete whole, sharply differentiated from others, rather than as a transitory stage in a continuous process.

It is in these terms that Weber approaches the problem of capitalism. He considers it as a system sharply differentiated from others which have existed in history. The "activities" involved in it are specific products of highly specific influences, among which the ethic of Protestantism occupies the central place. There is no reason to suppose that without the presence of such a specific constellation of factors any such way of life would ever have come into existence. It is emphatically not the sole result of the whole evolutionary process; Weber is immune from such surreptitious teleology. Similarly the

use of power, tho not that of force. See Wirtschaft und Gesellschaft, Ch. II, p. 32.

civilization of India is to be understood to a large extent in terms of the peculiar values it embodies — again mainly religious — and not as merely a "retarded" stage of social development as a whole. Thus Weber, like Pareto, achieves a wide perspective on the characteristics of modern capitalism, which was closed to Marshall. In his case also it is the totally different sociological framework which enables him to do this. Nothing would be further from the truth than to suppose it was *more knowledge*, in any quantitative sense, that gave Weber and Pareto their advantage over Marshall. On the contrary, it is their strictly theoretical insight; in other words, clarity of thought on fundamental problems. That is the point of this whole analysis.

To conclude. These two papers have been concerned with supporting the following line of argument. Marshall in his economic writings does not confine himself to the narrow range of problems of value and distribution which are ordinarily thought to have constituted the field of orthodox economics. On the contrary, parallel with, and inextricably bound up with his "pure theory" runs a second line of doctrine concerning the relation of economic activities to human character. In his own estimation this second line is at least as important as the first. It must be considered as a theory and not as the "application" of his real theory.

The peculiar way in which Marshall deals with these problems and the way he fuses his thought concerning them with his pure economic theory implies a position on the broadest questions of social theory so definite that it must be held to constitute a system of sociology. The characteristic features of this sociology are not a matter of Marshall's more or less random observations on things lying outside his field, but grow out of the logical exigencies of fitting his own central doctrines into the framework of sociological theory dominant in the England of his time. This is the real reason why Marshall's doctrines are of more than historical interest. They throw a bright light on the whole structure of English social thought.

Considered as a sociology, his work represents in some respects an improvement on that of his predecessors. But both his own strong belief in the importance of the activities which form his central theme, and the narrowness of the tradition into which he had to fit them, combined to lend a certain lack of perspective to his treatment of the activities which closed his eyes to the importance of many other things. His views of their place in social evolution will not stand criticism in terms of the wide sweep of history with which sociology after all must concern itself.

It is possible to escape this lack of perspective, but only by undertaking a thoro reconstruction of the intellectual tradition of which Marshall formed a part. The first essential step in such a reconstruction is the limitation of the field of economics so as to deprive it of the tendency it shows in Marshall's hands to expand into a general sociology with a very particular bias. This demarcation has been the starting point of the two systems of sociology just sketched. Both make room for an important and legitimate science of economics within the framework of a sociological scheme so broad as to counteract any tendency to economic one-sidedness. But both are built on a logical basis radically opposed to that of most previous Anglo-American social thought. This is not a plea for unqualified acceptance of the doctrines either of Pareto or of Weber;[7] indeed in some respects they are incompatible with each other. Other possibilities equally promising may exist, or are likely to be developed in the future. But I think any system of sociology satisfactory from the viewpoint of this paper will necessarily involve departures from the main lines of the Anglo-American tradition as radical as those of Pareto and Weber.

In any case, I make a very serious plea that the theoretical questions here raised be faced. They cannot be evaded either by complacent and unquestioning acceptance of tradition or by flight to the "facts." Marshall himself once said "the most reckless and treacherous of all theorists is he who pro-

7. I have dealt with some of the difficulties in Weber's position in my article in the Journal of Political Economy, cited above.

fesses to let facts and figures speak for themselves."[8] In the field of the ultimate questions regarding the basis of his science he stands convicted by his own indictment. Let us hope that others who have his experience to build upon will not turn even further away from such questions than he did. Science, if it failed to map out its course, would be as lost in the uncharted seas of "fact" as a ship without a navigator.

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8. Present Position of Economics, Memorials, p. 168. Of course Marshall is perfectly correct, especially as against the Historical School at which the remark was aimed. I am merely construing his statement even more widely than he intended in order to turn it against him.

THE YELLOW DOG CONTRACT

SUMMARY

Definition of the yellow dog contract, 348. — Reasons for its importance, 349. — The development of the contract, 350. — The Hitchman decision and its effect, 351. — The Red Jacket case, 353. — Uses of the contract, 355. — Provisions in the contract, 356. — The Hitchman provisions, 357. — Promises of employers, 358. — The future of the contract, 360.

Employers who try to prevent the growth of organization among their employees have several modes of procedure open to them. They may organize a company union to forestall the growth of interest in a bona fide union; they may treat with their employees only as individuals, ignoring the union but not attacking it; they may discharge the union leaders, or even every union man; or they may exact from each employee a pledge to have nothing to do with the union. Such a pledge is called a yellow dog contract.

The yellow dog contract is therefore a promise, made by workers as a condition of employment, not to belong to a union during the period of their employment, or not to engage in certain specified activities, such as collective bargaining or striking, without which the formal right to belong to a union is wholly valueless.[1] It is a form of pressure which

1. An example of this last mentioned type is the contract used by Strout, Stritter & Co., Inc., of Lynn, Mass., which said nothing as to the right of joining a union, but which made each worker promise that "I will not take part in any strike or in any concerted cessation of work or in any effort or plan to hinder the conducting of your business." See The Shoe Workers' Journal, March, 1929, p. 15.

The Kennecott Copper Corporation of Kennecott, Alaska, went even farther, and permitted its employees to join those unions that could not become a menace to it. In the notice to its men announcing that they would have to sign individual contracts appears this provision:

"2. The company has not the slightest objection to retention of membership in any labor union or organized body of workmen which is not active at or in the vicinity of Kennecott, or is not seeking membership among the employes of this company."

For the full text of the notice see United Mine Workers' Journal, May 30, 1918, pp. 24–25.

in its economic aspects differs but little from the other devices mentioned above. That it has aroused much more bitterness and resentment than any of the others is due to two factors. One of these is the psychological one and is obviously as old as the contract itself. The other, far more important, is the legal situation, which developed after the Hitchman decision of 1917.[2] Ever since the United States Supreme Court handed down its decision in that case (Dec. 10, 1917), it has been a comparatively easy matter in the federal courts[3] and in a number of state jurisdictions[4] for employers to secure injunctions restraining union organizers from interference with the non-union contracts of their employees. The yellow dog contract as a matter of law is merely one portion of the general subject of the labor injunction. But an injunction based on the individual, anti-union promise is a particularly formidable weapon, because an injunction is so easy to secure on this ground; because the threat of injunction is much more effective if based upon such a promise;[5] and because the terms of an injunction secured in this fashion are as a rule more

2. Hitchman Coal & Coke Company v. Mitchell, 245 U. S. 229, 38 Sup. Ct. 65.

3. The more important of the federal cases are Gassaway v. Borderland Coal Corp., 278 Fed. 56; Montgomery v. Pacific Electric Ry. Co., 293 Fed. 680; Bittner v. West Virginia-Pittsburgh Coal Co., 15 Fed. (2d) 652; and International Organization, United Mine Workers of America v. Red Jacket Consol. Coal & Coke Co., 18 Fed. (2d) 839. For a discussion of these cases see Carey and Oliphant, "The Present Status of the Hitchman Case" (1929), 29 Columbia Law Review 441.

4. For a list of cases involving yellow dog contracts see Witte, " 'Yellow Dog' Contracts" (1930), 6 Wisconsin Law Review 24 to 26.

5. For such a threat, used by the Alabama Fuel and Iron Co. against District 20, United Mine Workers, see United Mine Workers' Journal, December 1, 1920, p. 8.

In his testimony before Committees of the Ohio House and Senate, March 3, 1925, John P. Frey, then editor of the International Molders' Journal, read a letter sent his union by attorneys for the Elmwood Casting Co., citing the Hitchman decision, and threatening a similar suit unless organizing work was abandoned. Part of this letter was as follows: "If, as has been reported, you have engaged in any way directly or indirectly in endeavoring to persuade the employees of the Elmwood Casting Company to join a union and thus violate their contract with their employers, you fall within this decision [the Hitchman decision], and unless you discontinue such action, the company will proceed to protect its legal rights as outlined in the case above referred to."

drastic, in that peaceful persuasion, usually permitted, is expressly prohibited.

The Development of the Yellow Dog Contract

Agreements not to belong to unions appeared in England in the first half of the nineteenth century, but did not play an important part in the labor struggle.[6] It is only in the United States that the individual, anti-union contract has been a factor in labor disputes. During the seventies it became prominent in the New England textile manufacturing regions,[7] and was also used against the machinists in Erie, Pennsylvania.[8] It was used by the Cigar-manufacturers' Union of Cincinnati in 1880;[9] by the Excelsior Manufacturing Co. of St. Louis in 1881;[1] by the Chicago stockyards in 1882;[2] by John S. Perry, an Albany, N. Y. stove manufacturer, in 1884;[3] by Knowles, Taylor & Knowles, East Liverpool, Ohio, crockery manufacturers, in 1887;[4] and by the Reading Railroad in 1889.[5]

As a result labor went to the legislatures and, beginning with New York in 1887, sixteen states wrote on their statute books declarations making it a criminal act to force employees

6. Webb, The History of Trade Unionism, pp. 115, 149, 197.

7. In 1875 in Fall River, Mass., at the close of the great textile strike and lockout known as "The Great Vacation," in which 15,000 persons were involved, the operatives had to sign agreements providing that no employee should belong to a union in the future, and that only one out of eight could give notice to leave work at the same time. See McNeill, The Labor Movement: The Problem of To-Day, pp. 223–225.

Between 1880 and 1900 the usual name applied to the individual contract in this country was "Iron-clad." This term was used both for the agreement to quit the union and for the less common pledge not to join in the future.

8. Iron Molders' International Journal for the Month Ending July 31, 1873, p. 47.

9. Iron Molders' Journal for the Month Ending February 29, 1880, p. 6.

1. Ibid., Month Ending August 31, 1881, p. 3.

2. McNeill, op. cit. supra note 7, pp. 168–169.

3. Report of the Executive Board of the Knights of Labor, 1884. p. 653.

4. Ibid., 1887, pp. 1435–1436.

5. Journal of United Labor, July 11, 1889, p. 3.

to agree not to join unions.[6] These laws were easily evaded and proved almost wholly ineffectual while they remained in force; in 1915 they were declared unconstitutional by the United States Supreme Court on the ground that they violated the clause in the Fourteenth Amendment prohibiting the states from depriving anyone of liberty or property without due process of law.[7] From an economic point of view the effect of this decision was negligible. Employers were now free to resort to anti-union contracts without hindrance from laws that had never been observed, and employees could now be forced to sign agreements which they violated with impunity, and which union organizers wholly disregarded. From 1900 to 1917, though used occasionally, the individual, non-union contracts played an unimportant part in labor relations. The National War Labor Board, established in April, 1918 to insure the peaceful settlement of labor disputes for the duration of the war, refused to permit the contracts to be used, and ordered the General Electric Co. and the Omaha and Council Bluffs Street Railway Company to stop using them.

In the meantime, almost unnoticed in the general confusion, the apparently secure legal position of the organized labor movement was suddenly undermined. On December 10, 1917, the Supreme Court had handed down its decision in the famous Hitchman case, enjoining union organizers from interfering with the individual, anti-union contracts of the Hitchman employees.[8]

6. These states were California, Colorado, Connecticut, Idaho, Indiana, Kansas, Massachusetts, Minnesota, Missouri, Nevada, New Hampshire, New Jersey, New York, Oklahoma, Pennsylvania, and Wisconsin. Porto Rico also passed such a law, as did the federal government with respect to carriers engaged in interstate commerce.

7. Coppage v. Kansas, 236 U. S. 1, 35 Sup. Ct. 240. The Missouri, New York, and Minnesota laws had already been declared unconstitutional by the respective state courts. State v. Julow, 129 Mo. 163, 31 S. W. 781 (1895); People v. Marcus, 185 N. Y. 257, 77 N. E. 1073 (1906); State ex rel. Smith v. Daniels, 118 Minn. 155, 136 N. W. 584 (1912). Part of the federal act had been declared unconstitutional by the Supreme Court in Adair v. United States, 208 U. S. 161, 28 Sup. Ct. 277 (1908).

8. It is interesting to speculate as to whether the decision would have been different had it been delayed four months. Since the case had been in the courts for ten years, the rights of the parties could not have been

Before this decision the only effect of the non-union promises had been psychological, the legal rights and the economic powers of the parties being unaffected by them. The employers had acted upon the theory that their workmen, being honest, would remain out of unions once they had promised not to join; or, being ignorant, would not know that there were no legal penalties for joining; or, being timid, would be afraid to take any action to which their employers were so vigorously opposed. Formerly the only penalty for violation of the contract had been dismissal, but since the employment was almost invariably at will, the employer had the unlimited right to discharge at any time he saw fit to do so. Since he could exercise this right, if he so chose, whenever his employees joined a union, whether or not they had promised to remain non-union, it followed that the contract neither added to nor subtracted from the rights or obligations of either party.

The Hitchman case, however, transformed this ineffective psychological device into a powerful legal weapon. If injunctions to restrain third parties — and therefore union leaders and organizers — from interfering with anti-union promises will issue, then any attempt thereafter to organize the men becomes contempt of court. Formerly the only penalty had been the dismissal of employees who joined the union at the invitation of the organizer; now in addition the organizer could be sent to jail.

The appearance of the decision was the signal for the introduction by a few employers of similar contracts into their own plants.[9] The movement, however, did not acquire much

affected, as a matter of law, by the policies of the National War Labor Board; but since there were no precedents to follow, and since the non-union contract was outlawed, at least for the duration of the war, by the authority of the President, it would have been far more difficult, after the establishment of the Board, for the Court to have handed down the decision it did.

9. The Kennecott Copper Corporation of Kennecott, Alaska, for example, introduced individual contracts as soon as the Advance Opinions of the Supreme Court containing the Hitchman decision reached it. For the notice posted by the company see United Mine Workers' Journal, May 30, 1918, pp. 24–25.

momentum until the collapse of the war prosperity in 1921. In the bitter onslaughts made upon organized labor during that and the following year the individual, anti-union promise figured prominently; and it was during this period that the term "yellow dog contract" began to appear in the press.[1]

The first industry to adopt the yellow dog contract on an extensive scale was the coal industry of West Virginia. There were several reasons why this should have been so. The Hitchman mines were located in that state, and its neighbors were naturally most familiar with its experience; the West Virginia coal fields were at that time engaged in a bitter struggle over unionization, from which the operators emerged victorious; and the isolated locations of the mining towns and the semi-feudal organization of the industry made it particularly easy to fasten such agreements upon the employees. It was not surprising, therefore, that the West Virginia coal industry also contributed the case which in economic effect if not in its legal aspects ranks next in importance to the Hitchman case. In this more recent case twelve suits instituted by a total of 316 companies were consolidated into the well-known Red Jacket case,[2] decided by the United States Circuit Court of Appeals of the Fourth Circuit in 1927. Judge Parker, who wrote the decision, argued that he was bound by the Hitchman verdict to protect the contracts by injunction.[3]

1. "Yellow dog," a general term of contempt, was applied to obnoxious house leases in the West Virginia coal fields as early as 1902. The typical lease to bear this colorful designation was one providing that the lessor — which was the employing coal company — could at any time enter upon the premises and remove persons objectionable to it. The promise not to join a union was widely used in that area, and in many instances the same instrument was both lease and contract of employment. It was only natural, therefore, for the contract to be called a "yellow dog" likewise. It was 1922 before the term came into general use as applied to contracts.

In the street railways industry the individual, non-union contract has for years been called a "master and servant agreement."

2. International Organization, United Mine Workers of America v. Red Jacket Consol. Coal & Coke Co., 18 Fed. (2d) 839, cert. den., 275 U. S. 536.

3. The truth is, however, that there were ample grounds upon which the two cases could have been distinguished. Several of the points of difference between the cases are that the Hitchman decision was based to

During 1927 and 1928 a reaction set in, the courts of New York state taking the lead in refusing to enforce the yellow dog contract.[4] The strength of the forces opposed to the yellow dog contract was effectively demonstrated May 7, 1930, when the Senate refused to confirm the nomination of Judge Parker to the Supreme Court chiefly because of his decision in the Red Jacket case.

Nevertheless the yellow dog contract is being resorted to more and more frequently, until today the industry that has not experienced at least one instance of its use is indeed rare. The West Virginia coal fields are literally covered by such contracts, and in other states throughout that industry they are extensively used. The hosiery,[5] street railway, and shoe manufacturing[6] industries have also had them in great numbers, and the molders have likewise had considerable experience with them.

a considerable extent upon the defendants' lack of good faith; that in the Hitchman case the men joined the union and continued working in violation of their contracts; and that the Clayton Act, which could not be considered in the Hitchman case because it was passed after the litigation had commenced, was now in effect. It should be added, however, that the Supreme Court had in 1921 interpreted the provisions in the Clayton Act in Duplex Printing Press Co. v. Deering, 254 U. S. 443, so as to make them virtually ineffective.

4. For a review of the New York cases see Carey and Oliphant, op. cit. supra note 3.

5. At the 1929 convention of the American Federation of Labor a representative of the full fashioned hosiery industry asserted that of the eighty-five mills of consequence in that industry, sixteen were then using yellow dog contracts. Two of the sixteen had already secured injunctions, and four more had made application for them. Proceedings, 49th Annual Convention of the A. F. of L., p. 340.

6. The Shoe Workers' Protective Union has incorporated into its constitution a provision prohibiting its members from signing individual, anti-union promises. Since this is in the nature of a contract between the union and each of its members, any attempt by an employer to get these men to sign yellow dog contracts would seem to be enjoinable under the rule of the Hitchman decision. The union once asked for an injunction on this theory, but the court held that the employer in that case did not force his employees to leave the union, but merely sought to establish an open shop. Nolan v. Farmington Shoe-Mfg. Co., 25 Fed. (2d) 906. For another case in which this provision figured see New England Wood Heel Co. v. Nolan, 167 N. E. 323. (Mass., 1929.)

Uses of the Contract

In a number of instances the non-union promise is introduced at the close of an unsuccessful strike, the employer insisting that each of his defeated workmen renounce the union before he can resume his former duties. Often it is the activity of a union organizer in the vicinity of the establishment and the consequent growth in union sentiment that leads the employer to present anti-union agreements to his men. In such instances the contract may precipitate the dispute.[7] Years of depression are favorite times for the introduction of the contracts, for the presence of large numbers of applicants for employment makes it easy to replace those who refuse to sign, while the employer has little to lose if his establishment is closed down. The post-war depression of 1921, as has already been related, brought out large numbers of the contracts.

In certain industries, particularly bituminous coal mining, the economic pressure of competition has been a potent factor in the spread of anti-union promises. Operators in Pennsylvania and other high-wage unionized states have seen their markets being taken away by non-union coal from West Virginia, and have resorted to individual contracts in an effort to crush the union, reduce wages, and so meet competitive prices. Such was the case between 1925 and 1927, when a number of operators broke the Jacksonville agreement that maintained wages in the Central Competitive Field at a much higher level than was being paid in the non-union localities.[8]

In almost every industry some employers have resorted to non-union agreements. For the most part it has been small

7. In 1913 President A. C. Hughes of the Coopers International Union organized a local among the employees of the Alfrey Heading Mills at Jonesboro, Ark. One week later the men were given yellow dog contracts to sign and, upon refusing, were locked out. See Coopers International Journal, January, 1914, p. 24.

8. The Pittsburgh Coal Co. was one of the leaders in this movement to abrogate the Jacksonville agreement, reduce wages, and install yellow dog contracts. For the company's defense of its action see the testimony of its president in Senate Hearings on Conditions in the Coal Fields of Pennsylvania, West Virginia, and Ohio, pp. 2531–2532.

or medium-sized establishments that have turned to them, the larger concerns showing a preference for company unions. An individual employer, learning of the successful use of the contracts by some other concern, or being advised by his attorney that they would strengthen his legal defenses against union onslaughts, would introduce them in his plant at one of the times mentioned above. This has been the typical instance of their use, tho in a few cases they have been introduced simultaneously over a larger area by members of an employers' association.[9]

In recent years certain labor agencies which make a business of assisting employers to defeat attempts on the part of their employees to organize have been instrumental in securing the adoption of yellow dog contracts, particularly in the hosiery industry. The agencies, in addition to advising the employer to introduce the contracts, usually undertake the job of installing them.[1]

Provisions in the Contract

Individual, non-union agreements range in length from simple statements of a single sentence to complex documents that cover several pages. The essential portion of each is similar, however, and consists of a promise by the employee not to belong to a union during the particular employment. The contract used by the St. Louis and San Francisco Railway Company in 1911, that gave rise to the famous Coppage *v.* Kansas case, consisted merely of such a declaration. "We, the undersigned," it read, "have agreed to abide by your request, that is, to withdraw from the Switchmen's Union, while in the service of the Frisco Company."[2] Equally simple was the form used by the Cigar-manufacturers' Union of Cincinnati in 1880. It read as follows: "I hereby renounce my

9. A comparatively recent example of this concerted introduction of anti-union promises is that of the Chicago Heights Auto Dealers Association in 1926. See Machinists' Monthly Journal, August, 1926, pp. 386–387.

1. For a detailed description of such an effort see Brief for Appellant, Kraemer Hosiery Co. v. American Federation of Full Fashioned Hosiery Workers, pp. 14–20.

2. Coppage v. Kansas, 236 U. S. 1, 7 (1915).

membership in the Cigarmakers' Union, and pledge my honor that I will not become a member thereof, or aid such a Union, while in the employ of the firm of . . ."[3]

In most of the contracts additional promises of one sort or another are made. Very common is the pledge to make no effort to unionize the plant; promises not to engage in any form of collective bargaining, not to strike, and not to interfere with the company's business, employees, or customers after leaving the employment are likewise widely used. Often the signer must agree to adjust all differences individually with his employer, to leave quietly if he is dissatisfied, and to notify the employer if he decides to join a union.[4]

By far the most important contract from the historical point of view was that used by the Hitchman Coal & Coke Co., which is the only one thus far to receive Supreme Court approval, and which for that reason has since been copied by several dozen concerns.[5] The Hitchman form is as follows:

"I am employed by and work for the Hitchman Coal & Coke Company with the express understanding that I am not a member of the United Mine Workers of America, and will not become so while an employee of the Hitchman Coal & Coke Company; that the Hitchman Coal & Coke Company is run non-union and agrees with me that it will run non-union while I am in its employ. If at any time I am employed by the Hitchman Coal & Coke Company I want to become connected with the United Mine Workers of America or any affiliated organization, I agree to withdraw from the employment of said company, and agree that while I am in the

3. Iron Molders' Journal for the month ending February 29, 1880, p. 6.

4. The contract used by the Elmwood Casting Co. even required the employees to agree not to have any dealings, communications, or interviews with union representatives or members bearing upon union membership. See International Molders' Journal, April, 1925, p. 195.

5. Among these were the Eagle Glass Co. of Wellsburg, W. Va.; the Federal Glass Co.; the Fentress Coal Company of Wilder, Tenn.; the Micajah-Pocahontas Coal Co. of Micajah, W. Va.; the Ohio Shoe Co. of Lancaster, Ohio; the Winding Gulf Colliery Co. of Winding Gulf, W. Va.; the Chipman Knitting Co. of Easton, Pa.; and the Cambria Silk Hosiery Co. of Philadelphia, Pa.

employ of that company I will not make any efforts amongst its employees to bring about the unionizing of that mine against the company's wish. I have either read the above or heard the same read."[6]

The promises made by the employer in return, if indeed any are made, are as a rule of the most shadowy nature. Thus the Hitchman Company agreed with its employees that it would run non-union. The Alabama Fuel and Iron Company promised that it would not discharge an employee without notice "except for insubordination, misbehavior, incompetency, violation of this agreement or other just cause."[7] The Interborough Rapid Transit Co. of New York made what purported to be a contract for two years' employment, but listed so many grounds on which discharges might be made that Judge Wasservogel observed in his decision that "Unlimited and practically unhampered power to discharge employees is given to the company."[8]

In several cases employees are required to join company unions, at the same time promising not to join the bona fide union in their industry. The United Railways and Electric Company of Baltimore and the Interborough Rapid Transit Co. of New York are two concerns that use both these devices to forestall organization of their employees. This procedure is rather unusual, for most of the companies that have their own unions either expressly grant the right to join outside unions or else say nothing about it.[9]

Some employers have required their employees to leave sums of money with them, to be forfeited by any worker who

6. Hitchman Coal & Coke Co. v. Mitchell, 245 U. S. 229, 263–4. This contract was not used in written form until two months after the original restraining order had been issued. Since the rights of the parties accrued as of the time the bill was filed, the courts passed, not upon this written contract, but upon a similar oral one. This made no difference, however, since the contract is not one required by law to be in written form. Proof is merely easier if the contract is written.

7. United Mine Workers' Journal, December 1, 1920, p. 8.

8. Interborough Rapid Transit Co. v. Green, 227 N. Y. Supp. 258, 262.

9. In this connection see Brief for Defendants, Interborough Rapid Transit Company v. Green, pp. 59–61.

broke his contract and joined a union. In the case of Scott & Co., a Plainfield, New Jersey foundry, the forfeit amounted to one week's wages.[1] The contract of the Lithgow Manufacturing Company, made for a period of nine months, allowed the company to retain ten per cent of each molder's earnings, to be forfeited in case he joined a union.[2] Not content with a mere promise not to join a union, certain employers have required their employees to make affidavit to that effect. The Pittsburg Steamship Company required such an affidavit in 1908.[3] Stearns, Hill & Co. of Erie, Pa. in 1873[4] and certain New York City cooperage firms in 1875[5] required both the forfeit and the affidavit. Sometimes the application for employment and the promise not to join a union are embodied in the same instrument.[6] The contracts used by the Red Jacket Consolidated Coal & Coke Co.[7] and the Postal Telegraph-Cable Co.[8] are of this nature, both of them containing a great many questions as to personal history and previous employment in addition to the anti-union promise. In several instances the statement that the worker belongs to no union and will not join one comes as the answer to a question, in the application for employment. Thus, two of the questions in the employment form used by the Pleasant Valley Coal Co. of Utah were, "Do you belong to any miners' union?" and

1. Iron Molders' Journal, September, 1906, pp. 671–672.
2. Iron Molders' Journal for the Month Ending March 31, 1882, p. 4.
3. International Molders' Journal, September, 1908, p. 640.
4. Iron Molders' International Journal for the Month Ending July 31, 1873, p. 47.
5. Ibid., Month Ending May 31, 1874, p. 357. In this case it was reported that each man was asked to what church he belonged, and was then made to swear upon the Bible indorsed by that denomination.
6. Obviously in such cases the employee does not get a copy of the contract. But even where the anti-union promise is in a separate instrument it is the almost universal practice to make only an original, and deposit that in the company files. Often the contracts are jealously guarded, and it is only by stealth or subterfuge that a copy can be secured.
7. Senate Hearings on Conditions in the Coal Fields of Pennsylvania, West Virginia, and Ohio, p. 1846.
8. Senate Judiciary Committee Hearings on the Confirmation of Parker, p. 48.

"Would you join the miners' union if an attempt is made to organize one here?"[9]

Several instances are on record of the yellow dog contract having been used by workers against their employers. One occurred in 1891 when the Operators' and Cloak Makers' Union No. 1 of New York, emerging victorious from a lockout, forced their employers to sign the following agreement: "We the undersigned cloak contractors of New York declare that we locked out our workmen without cause and we agree not to belong to the Contractors' Association."[1]

The Future of the Contract

It is, of course, dangerous to prophesy, but in all probability the yellow dog contract will decline in importance in the not far distant future. Public opinion as registered at the time of the Parker nomination in the spring of 1930 was almost unanimously against it. The fact that Parker was refused a place on the United States Supreme Court chiefly because of his support of the contract may likely influence that tribunal when next a similar case is presented to it. Moreover, the membership of the court is somewhat more liberal than in the immediate past. If the Supreme Court does not desire to issue an injunction in the next yellow dog case, the Hitchman decision will not present much of an obstacle, for it will be an easy matter, in view of the peculiar facts in that case and the ambiguity of the decision, to distinguish from it almost any other case that may arise.[2]

If the Supreme Court leads the way, the state courts will probably follow; and if they show a reluctance to refuse an injunction at common law, this course may be forced upon them by statute. In 1925 a bill which made the yellow dog

9. United Mine Workers' Journal, March 21, 1901, p. 2.

1. Louis Levine, The Women's Garment Workers, p. 59.

2. As a matter of fact, the Supreme Court has already provided itself with the basis for such a distinction, by a dictum in the American Steel Foundries v. Tri-City Central Trades Council case, 257 U. S. 184. In that case Justice Taft, speaking of the Hitchman case, said, "The unlawful and deceitful means used were quite enough to sustain the decision of the court, without more."

contract unenforceable was drawn up at the request of the Ohio State Federation of Labor and introduced into the legislature of that state. The bill failed of passage, but four years later a similar measure was enacted in Wisconsin.[3] Similar bills have since been introduced in other states, and during 1931 several of them became law. Nor has effort to secure such an enactment by the federal government been lacking, for when Senator Shipstead's anti-injunction bill was redrafted in committee, the substance of the Ohio provisions was incorporated into it.[4] Once such measures are generally enacted, if they are not declared unconstitutional, yellow dog contracts will rapidly fall into disuse. It will still be possible to force employees to sign non-union agreements, but with the courts refusing to enforce them and the unions organizing in spite of them, it will be of no advantage to an employer to do so.

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3. For a discussion of the constitutionality of this measure see MacDonald, "The Constitutionality of Wisconsin's Statute Invalidating 'Yellow Dog' Contracts" (1931), 6 Wisconsin Law Review 86. The Supreme Judicial Court of Massachusetts, in an advisory opinion handed down on April 15, 1930, concluded that such a measure would be unconstitutional in that state. In re Opinion of the Justices, 171 N. E. 234.

4. The constitutionality of the federal bill is discussed by Frankfurter and Greene in "Congressional Power over the Labor Injunction" (1931), 31 Columbia Law Review 385.

BRANCH BANKING IN CALIFORNIA AND BANK FAILURES

The continued prevalence of bank failures in the United States gives point to the question, could we be spared the evils of bank failures if we had some form of regional branch banking? Ours is the only large commercial country in which branch banking is not the dominant form of banking. One state, however, and one only — California — has large, widespread branch banks.[1] There are five, operating some 729 branches, most of which are outside their respective head office cities. These five large banks possess six-tenths of the banking resources of the state. Their names and some relevant data (as of June 30, 1931) are:

	Total Resources (millions)	Number of Branches
Bank of America*	$1,120	415
Security-First National Bank	592	130
American Trust Company	271	94
California Bank	117	55
Citizens National Trust Savings Bank	128	35
Totals	$2,408	729

1. No adequate analysis of the California situation has been published as yet. Professor S. D. Southworth gives a careful description of the history of branch banking in California in his Branch Banking in the United States, McGraw-Hill Book Co., New York, 1928. Much useful material on the Bank of Italy is contained in the testimony of Mr. Bacigalupi and Mr. Giannini in the record of the hearings before the House Committee on Currency and Banking, United States Government Printing Office, Washington, 1930. Mr. C. W. Collins, former Deputy Comptroller of the Currency, prescribes branch banking for rural communities in his recent Rural Banking Reform, The Macmillan Co., New York, 1931. Other books which contain references to the California situation are: Bernhard Ostrolenk, The Economics of Branch Banking, Harper and Bros., New York, 1930, and G. T. Cartinhour, Branch, Group and Chain Banking, The Macmillan Co., New York, 1931.

*The name "Bank of America" is used to designate two banks which are run as one — the billion dollar Bank of America National Trust and Savings Association, and the sixty million dollar Bank of

The total banking resources of the state (including the above banks) amounted to $4,043,000,000 on the same date; total number of banks, 411; total number of branches, 829.

The remaining banks are many in number, not less than 406. A few among them operate branches, a total of 100, mostly in their respective head office cities. But the vast majority (by number) of banks in the state are unit banks, ranging in size from country banks with less than a million dollars in resources to one city bank with over one hundred fifty millions. Most large California towns and cities contain unit banks, and also a branch or branches of one or more of the five large branch banks.

Proceeding now to consider the question raised above, we may (1) analyze the data with respect to bank failures for the entire country, (2) do the same for California and (3) consider whether branch banking is responsible for that state's comparatively good record, or whether there are other explanations. Let it be noted, however, that the question of bank failures is but one phase of the branch vs. unit-banking con-

America, a California state bank. These banks emerged from the merger in November, 1930, of the Bank of Italy National Trust and Savings Association and the Bank of America of California. Into the national bank went all of the branches of the Bank of Italy, and in addition all of the branches of the Bank of America of California which were legally admissible under the provisions of the McFadden Act. The state Bank of America has the branches of the latter institution which were not thus legally admissible. Both of the predecessor banks were owned by Transamerica Corporation, as are the present institutions. The senior officers of the Bank of America National Trust and Savings Association hold the same offices in the state bank, and the two banks are advertised, administered and viewed as one.

The change of name from "Bank of Italy" to "Bank of America" was prompted by the feeling that the latter was a more appropriate name for a great California branch bank and by the hope of Transamerica Corporation (then largely dominated by Mr. A. P. Giannini and his friends) that eventually nation-wide branch banking would be permitted, in which case this bank and the Bank of America National Association of New York would form the nucleus of a nation-wide branch bank, under the name "Bank of America." Since the Elisha Walker-Lee Higginson interests secured control of Transamerica, this ambitious plan has been given up. The Bank of America National Association has been sold to the National City Bank of New York and the present Transamerica directors would like to relinquish the Corporation's controlling interest in the Bank of America (of California).

troversy. Conclusions reached with respect to this one phase of the problem would need to be compared with study of other phases before passing judgment on the desirability of extending branch banking.

BANK FAILURES IN THE UNITED STATES, 1921–1931, BY YEARS[2]

YEAR	NUMBER			DEPOSITS (in thousands of dollars)		
	All Banks	Member Banks	Non-member Banks	All Banks	Member Banks	Non-member Banks
1921	441	60	581	178,967	39,371	139,596
1922	289	33	256	75,156	12,625	62,531
1923	611	110	501	177,027	46,160	130,867
1924	682	139	543	190,876	67,279	123,597
1925	550	132	418	156,282	60,485	95,797
1926	707	146	661	211,878	60,633	151,245
1927	567	113	454	158,162	58,025	100,137
1928	452	68	384	122,915	35,630	87,285
1929	584	76	508	208,703	54,862	153,841
1930	1,198	180	1,018	803,116	376,902	426,214
1931 (Jan.-June)	507	127	380	360,332	125,474	234,858
Totals	6,688	1,184	5,504	2,643,414	937,446	1,705,968

Large tho these figures are, it is significant to note that, in certain respects, considering the country as a whole, the situation is somewhat less alarming than we are sometimes led to believe by exhibits which stress the *number* of failed banks. Inasmuch as the average deposits of all banks during the period under consideration was about forty-seven billion dollars, the deposits in the failed banks amount to only 5.6 per cent of the total deposits.[3] Furthermore, if we may infer

2. Data from Federal Reserve Bulletin, Feb. 1931, p. 112 and July, 1931, p. 415. These figures do not include banks suspended and subsequently reopened. Inclusion of such banks would increase the above totals about 11.5 per cent.

3. The annual figures are given in the Federal Reserve Board's Annual Report, 1930, p. 90.

from the previous record of liquidations of *national* banks, perhaps 50 per cent of this sum will be paid to the depositors during the liquidations.[4] This would bring the eventual loss down to approximately one billion four hundred million dollars, which is a small sum as compared with, say, stock market losses or losses from crime, fires or accidents.

BANK SUSPENSIONS BY STATES,[5] 1921–1931

State	Number of Banks, June 30, 1920	Number of Suspensions 1921–June 30, 1931	Number of Suspensions per 100 banks in operation in 1920
Alabama	352	81	23.0
Arizona	87	33	37.9
Arkansas	487	242	49.6
California	723	41	5.7
Colorado	403	99	24.5
Connecticut	220	9	4.1
Delaware	47	2	4.3
Florida	265	237	89.5
Georgia	738	368	49.8
Idaho	222	75	33.8
Illinois	1,610	364	22.6
Indiana	1,057	250	23.6
Iowa	1,763	663	37.6
Kansas	1,349	281	20.8
Kentucky	584	78	13.3
Louisiana	267	47	17.6
Maine	161	3	2.5
Maryland	282	13	4.6
Massachusetts	465	10	2.2
Michigan	700	122	17.4
Minnesota	1,515	475	31.4
Mississippi	354	123	34.8
Missouri	1,652	432	26.1
Montana	431	217	50.5

4. Cf. Comptroller Pole's statement on liquidation record in House Hearings, 1930, p. 75. The average for *national* banks in the past has been 70 per cent.

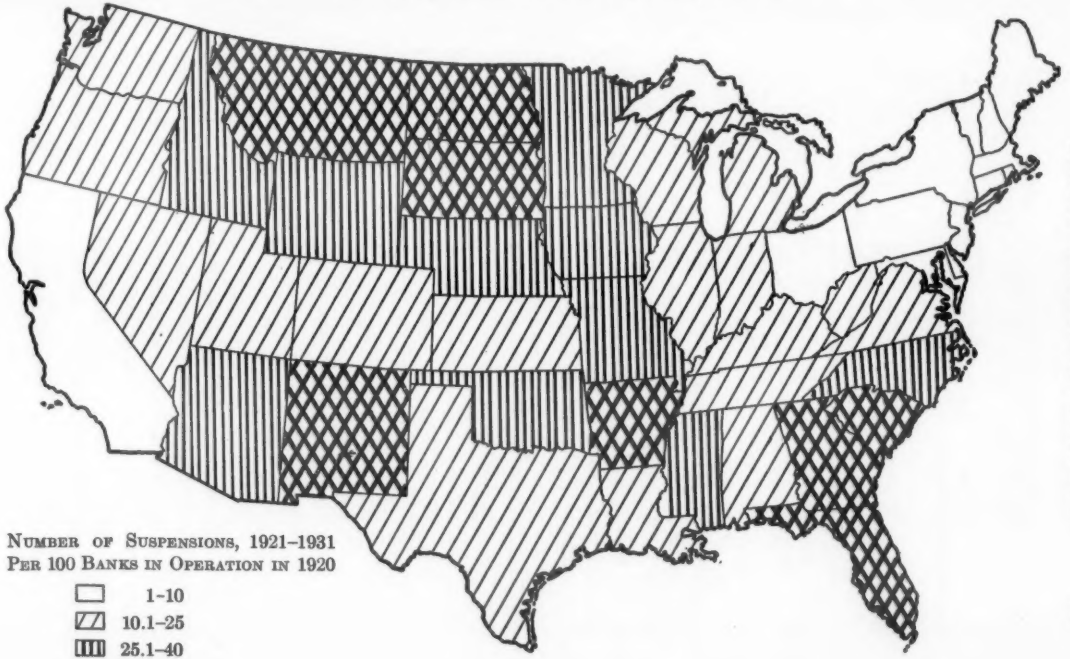
5. The above figures, which include banks suspended and subsequently reopened (about 10 per cent), are taken from House Hearings, 1930, p. 418 and Federal Reserve Bulletin, February, 1931, p. 113 and July, 1931, p. 423.

State	Number of Banks, June 30, 1920	Number of Suspensions 1921–June 30, 1931	Number of Suspensions per 100 banks in operation in 1920
Nebraska	1,196	399	33.2
Nevada	33	4	12.1
New Hampshire	125	2	1.6
New Jersey	388	13	3.3
New Mexico	123	62	50.5
New York	1,056	42	4.0
North Carolina	623	236	37.9
North Dakota	898	502	55.8
Ohio	1,145	114	10.0
Oklahoma	959	295	30.7
Oregon	277	52	18.7
Pennsylvania	1,546	96	6.2
Rhode Island	48	3	6.2
South Carolina	461	265	57.5
South Dakota	694	462	66.5
Tennessee	546	110	20.2
Texas	1,582	352	22.2
Utah	133	23	17.6
Vermont	108	2	1.8
Virginia	488	77	15.8
Washington	394	64	16.2
West Virginia	340	52	15.3
Wisconsin	976	117	12.0
Wyoming	160	60	37.4
United States	30,078	7.669	25.6

Eight states show suspension ratios greater than 40 per cent: Arkansas, Florida, Georgia, Montana, New Mexico, North Dakota, South Carolina, South Dakota. Only nine states show suspension ratios lower than that of California, they being: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, and Vermont. The situation is depicted graphically in the map on the next page.

MAP SHOWING BANK SUSPENSION RATE BY STATES, 1921–1931

MAP SHOWING BANK SUSPENSION RATE BY STATES, 1921–1931



BANK SUSPENSIONS, 1921–1930, BY AMOUNT OF CAPITAL STOCK AND LEGAL STATUS[6]

	National	State Member	Non-member	Totals
Less than $25.000		3	2,667	2,670
$25,000	326	70	1,210	1,606
$25,100–$49,000	81	32	512	625
$50,000–$99,000	315	72	819	1,206
$100,000–$199,000	136	56	343	535
$200,000–$999,000	63	18	124	205
$1,000,000 and over	3	6	11	20
Not available			120	120
Totals	924	257	5,806	6,987

Cumulative percentages may be derived from the foregoing table as follows: 61 per cent of the failures were banks with $25,000 capital or less. Further, since some six-sevenths of the banks in the $50,000–$99,000 category are $50,000 banks, it would be safe to say that 85 per cent of the failures were banks with $50,000 capital or less.

BANK SUSPENSIONS, 1921–30, BY SIZE OF TOWN OR CITY[7]

Places with Population of	
Less than 500	2,720
500– 1,000	1,411
1,000– 1,500	695
1,500– 2,500	674
2,500– 5,000	532
5,000–10,000	299
10,000–25,000	237
25,000 and over	419
Total	6,987

Again drawing cumulative percentages we note that 39 per cent of the suspensions occurred in towns with a population of less than 500; 59 per cent in towns of 1,000 or less, and 78 per cent in towns of 2,500 or less.

6. From Federal Reserve Board, Annual Report (1930), p. 132. These figures include banks suspended and subsequently reopened.

7. From Federal Reserve Board, Annual Report (1930), p. 133. These figures include banks suspended and subsequently reopened.

To sum up: bank suspensions have been most numerous (1) in certain states, (2) among non-member banks, (3) among small banks, and (4) in banks located in small towns.

We may now turn attention to the causes or conditioning circumstances of bank failures in the United States as a whole and in California, and attempt to appraise the influence of branch banking upon California's low average.

The Comptroller of the Currency classifies five "apparent" (*sic*) causes of failure, in the case of national banks, two or more of which may be combined: incompetent management, dishonesty, local financial depression from unforeseen agricultural or industrial disaster, receiver appointed to levy and collect stock assessment covering deficiency in value of assets sold, temporary suspension. Of these, incompetent management and local financial depression, separately or combined, account for the vast majority of national bank failures.[8]

The California Superintendent of Banks wrote in 1928: "In seven instances (out of 27 failures) this . . . resulted solely from the dishonesty of an officer or employee. . . . However, the predominating cause of suspension was mismanagement, which manifested itself in a wide variety of ways, chief among which were excessive loans to individuals, poor investment, failure to secure proper collateral, payment of unwarranted dividends, a general inability to retain sufficient liquid assets to meet extraordinary demands of depositors, and finally, actual inability to maintain a cash reserve equal to that provided for in the Bank Act of this state."[9]

These classifications are at once revealing and concealing — revealing in that they focus attention upon specific symptoms and concealing in that they do not go behind them. To put it tersely, most failures are due to losses sustained on investments — on loans, bonds and other items. It is common knowledge that losses on loans constitute the chief source of bank trouble. Loans may be poor because either the borrower (as an individual) turns out to have been a poor risk, or because the enterprise fails in spite of good management, or

8. Comptroller of the Currency, Annual Report (1930), pp. 307–321.
9. Annual Report (1928), p. 62.

(in either case) if collateral has been pledged, it turns out to be poor.

This collateral question deserves more than passing notice. In too many cases loans secured by collateral are made less carefully than unsecured loans, the banker relying on the collateral. Where the collateral has been real property (against a mortgage loan) this has often proved to give a false sense of security. In farm loans, conditions making difficult the repayment of the loan are likely to reduce *pari passu* the value of the mortgaged farm, so that the same circumstances which lead to the necessity of foreclosure reduce the collateral value of the foreclosed property. The delay in the process, the uncertain value of land, and the necessity of forced sale further diminish the collateral value of real property. So poor, I believe, is the collateral value of real property that mortgage loans ought to be scrutinized quite as carefully as unsecured loans, and little or no reliance placed upon realty as collateral.

The branch banks in California have led the way in requiring borrowers' statements, which is undoubtedly a safeguard against unwise loans to particular individuals. They have been criticized for being "cold blooded" in their loan policy, but generally speaking the result is sounder banking than the easy going methods of many country banks. Each branch manager has lending limits; below them he may make new loans without head office consultation, but all loans thus made are subsequently reviewed by the head office credit department. Larger loans must be referred to the head office before being made. This is careful banking.

Again, if a branch bank operates in many communities and many industries, the distribution of risk protects the depositors against losses on loans, where borrowing enterprises fail because of conditions over which the enterprisers have no control. The consensus of opinion among large and small bankers interviewed by me in California is that the large banks do somewhat better in handling their bond accounts than do the small banks. By virtue of their size rather than their character, the branch banks judge better than the small

unit banks. Any large bank can afford to maintain persons to study the bond market and guide its purchases and sales. The small banker must rely on his correspondent bank, on bond salesmen and on his own limited knowledge of the governments and corporations issuing the bonds.

Two small branch banks have failed in California in recent years. The Valley Bank, head office Bakersfield, was undermined by the agricultural depression in the San Joaquin Valley, and in 1924 at the request of the Superintendent of Banks was taken over by and divided between the Bank of Italy (now part of the Bank of America) and the Pacific Southwest Trust and Savings Bank (now part of the Security-First National). In August 1931, the United States National Bank of Los Angeles, with eight branches (all in the city) and some eleven millions in deposits, suspended. Its suspension was caused by a steady run on the bank when depositors learned that suits had been brought against the trust department of the bank for sums larger than the bank's capital.

On the whole, then, the management of the California branch banks has been and is excellent — and management is the crux of the failures problem. But the fact remains that failures have been very few among the unit banks. This, in my opinion, has been due to four factors:

(1) California's comparatively favorable economic position;

(2) The presence of branch banks;

(3) The ability of California unit bankers;

(4) The excellence of the California Bank Act and of the State Banking Department.

The first of these factors is imponderable. But "business maps" of the country showed California pretty consistently as a "white spot" until, of course, the last two years. On the other hand, California probably did not prosper as greatly during the war as did many other states. In some of the midwest states, the ease with which state bank charters could be secured contributed to the inflation of land values.

That the presence of branch banks has lowered the average rate of failures in the state we have seen. It has also lowered the rate of failures among unit banks by pioneering in the

insistence on borrowers' statements, a practice which the unit banks were then more easily able to adopt. In general, the branch banks have disseminated sound banking methods throughout their branches, and competing unit bankers have learned and copied many innovations from them.

One gathers the impression from interviewing the small California unit-bank chiefs that they are capable bankers. This may be due in part to the care with which charters are granted in California. The state Superintendents of Banks, in general, have granted charters only where the men and the circumstances have warranted doing so. Inasmuch as the curious "competitive" situation as between the national and state systems affects the policies of the national authorities, the Comptroller of the Currency has been more able to be chary with national charters in California. To the extent that this is an explanation of the ability of California unit bankers, it belongs more properly under the fourth reason.

Finally, I am much impressed by the protective features of the California Bank Act, many of which are superior to those in the national laws, and by the California State Banking Department, which is quite as efficient as its national counterpart. Neither of these statements would be true of many other states. The low failure record of California state banks is noteworthy. The following tables present the comparative records of state and national banks for the United States as a whole and for California.

BANK FAILURES IN THE UNITED STATES, JULY 1, 1919–JUNE 30, 1931, BY LEGAL STATUS OF BANKS[1]

	State	Private	National
Average number of banks	19,676	549	7,845
Number of failures	5,648	256	989
Failures per 100 banks	28.6	46.5	12.6
Average bank assets (000,000)	$33,477	$166	$23,227
Liabilities of failed banks (000,000)	$2,222	$53	$624
Liabilities of failed banks per 100 of average total bank assets	6.6	31.9	2.7

1. This table and the two following were prepared in partial collaboration with Mr. Joseph A. Crumb, Supervisor of Research and Statistics, California State Banking Department. The figures for 1930–31 used in completing the totals are, in part, estimates believed by the writer to be highly accurate.

BANK FAILURES IN CALIFORNIA, 1920–1931, BY LEGAL STATUS OF BANKS

	State	National
Average number of banks.....	321	247
Number of failures.....	16	17
Number of failures per 100 banks	5.0	6.9
Average bank assets (000).....	$1,924,449	$1,508,679
Liabilities of failed banks (000).	$13,197	$11,273
Liabilities of failed banks per $100 of average total bank assets.....	$.605	$.746

BANK FAILURES IN THE UNITED STATES AND IN CALIFORNIA COMPARED BY LEGAL STATUS OF BANKS

	FAILURES PER 100 BANKS		LIABILITIES OF FAILED BANKS PER $100 OF AVERAGE TOTAL BANKING ASSETS	
	State	National	State	National
U. S. (1920–30).....	28.6	12.6	6.6	2.7
California (1920–31).....	5.0	6.9	.685	.746

It is striking that, whereas in the entire country national banks have made a much better record, both as to relative number of failures and deposits tied up, than have state banks, the reverse is true in California. There the record of state banks is slightly better on both counts than is that of national banks. The superiority of the state banks' record is further indicated by the percentage of recovery by depositors in failed banks. The records of liquidations begun since 1910 (the year following that in which the new California Bank Act went into effect) and *completed* to date, shows that the final payoff on general claims has averaged 64 per cent in the national banks and 91 per cent in the state banks.[2] Finally, under the California system of departmentalized banking, the recovery in the cases of depositors in state savings banks or in savings departments of state banks, has been 100 per cent.[3]

2. The data from which these percentages were computed were supplied by Mr. Joseph A. Crumb, Supervisor of Research and Statistics, California State Banking Department.

3. Cf. Superintendent of Banks, Annual Report (1928), pp. 66, 67. Confirmed for subsequent years by Mr. Crumb.

Neither good laws nor good supervision can create good management. But they can restrain poor management and protect depositors against its consequences when it does occur. In precisely what ways is this accomplished in California?

In the first place, the examination of banks and the control exercised over them by the State Banking Department is of high quality. While the Superintendency is something of a political plum, the rest of the employees of the Department (with the exception of its attorney) do not change office with changing administrations. Bankers who have had experience both with state and national examinations agree that the former are quite as searching as the latter.

There are several superior provisions in the California Bank Act. Noteworthy is the provision for departmental banking, under which any bank wishing to do commercial, savings and/or trust business, must operate each department practically as a separate bank. Each department has segregated capital, surplus, deposits, reserves, and assets. This feature accounts for the perfect recovery in the case of liquidated savings banks and savings departments. Invoking the thirty-day notice rule against savings depositors does not prejudice their position as compared with demand depositors, since the latter cannot draw on the savings department cash or other assets.

The minimum amount of capital required to open a state bank in California is not only higher than that required to open a national bank, but is much higher than required by other state laws. The minimum amount which must be paid up in cash before the bank can be opened is: capital, $50,000, and surplus, $12,500, making a total of $62,500. For a national bank in a small town the minimum capital is $25,000 (subject, it is true, to sanction of the Secretary of the Treasury); there is no initial surplus requirement. State banks may be started in many states with as little capital as $5,000 or $10,000. The California provision cannot but be valuable if there is anything in the contention that a petty bank cannot earn wages of management enough to attract a competent head.

A third protective provision in the California Act is that restricting the deposits which a bank may accept to certain multiples of its capital and surplus. The aggregate paid up capital, together with surplus, of every commercial bank must be at least equal to the following percentages of its deposit liabilities: 10 per cent, up to one million dollars, and 5 per cent of any amount in excess thereof. For the savings banks the percentages are: 10 per cent up to one million dollars; 5 per cent of any amount in excess thereof up to three million; 3 per cent of the excess of three up to twenty-five million; and 1 per cent of any excess over twenty-five million. These restrictions insure that the proprietors' equity in the assets shall not become so small as to fail to constitute any protection to depositors.

Finally, the reserve requirements are fairly high. For commercial banks they are: 18 per cent for a bank in a city of 100,000 population or more; 15 per cent in cities of 50,000 or over but less than 100,000; 12 per cent any other place in the state. Not less than 6 per cent of the deposits must be kept as reserves on hand[4] or as deposits in a Federal Reserve bank; the remainder may be kept on deposit in a designated depositary bank. Savings banks must keep a 6 per cent reserve, at least half of which must be kept on hand[4] or on deposit with a Federal Reserve bank; the remainder may be in United States government securities or deposited with a designated depositary.

To sum up:

(1) The California branch banks have offered and do offer great security to their depositors; and

(2) Other factors have operated to make depositors in both branch and unit banks relatively safe, outstanding among them being the excellence of the California Bank Act and the State Banking Department.

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4. "... reserves on hand ... shall consist of gold bullion or any form of money or currency authorized by the laws of the United States; ..." California Bank Act, Section 20.

DEMAND CURVES BY PERSONAL ESTIMATE[1]

Of recent years, the derivation of demand curves and the elasticity of demand by various statistical methods has become practically a branch of economics in itself. These attempts to measure individual or group demand have utilized two kinds of data, (1) those of market prices and quantities over a period of time,[2] and (2) expenditures given in family budgetary studies.[3] In order to relate these empirical curves to those of orthodox theory, which express the functional relationship between the quantity consumed and prices at any one time, many assumptions as to the nature of the theoretical curves have been made. One of the most common assumptions is that demand curves are straight lines on a double logarithmic scale. In reality, this amounts to saying that the elasticity of demand may be considered constant along the curve, for all ranges of price.[4] It is also usually assumed that demand curves are continuous within a considerable price range. Whether these and other hypotheses are justified, it has not been possible to say. The experiment described in this note is an attempt to check the validity of such hypotheses.

An investigation was made into the actual and estimated

1. This study has been carried on as part of the general study of demand undertaken by the Harvard University Committee on Economic Research.

2. A complete list of the investigations cannot be given, but "Synthetic Economics" by H. L. Moore, and "The Statistical Derivation of the Laws of Demand and Supply" by H. Schultz may be mentioned as of leading importance.

3. A. C. Pigou in Appendix II, The Economics of Welfare and Jacob Marschak, Elastizität der Nachfrage are most noteworthy in this group. Altho Pigou himself did not attempt to derive a demand curve, but merely the relative elasticities of demand of two commodities in successive income groups, he was one of the first to point out the significance of these data for the study of demand.

4. η (elasticity) $= \frac{dx}{dy} \cdot \frac{y}{x} = \frac{d(\log x)}{d(\log y)}$ or the percentage change in quantity consumed is in constant ratio to the percentage change in price.

expenditure of a group of economists at Harvard University.[5] Questionnaires were sent to each member of the department (including tutors) asking for the following information:

1. The total family income and age of the department member; whether accounts were kept.

2. The annual expenditure on travel, clothes, tobacco, beverages, entertainment, automobile, books, musical instruments, domestic service, rent or home maintenance, charity, and savings.

3. Estimates of the amount that *would* be spent on each of the above items, assuming tastes to remain the same, under two kinds of conditions:

a. If income increased 10, 25, 50, and 100 per cent; and decreased 5, 10, 25, and 50 per cent.

b. If income remained the same, and the price of each commodity or group of commodities increased 10, 25, 50, and 100 per cent, and decreased 5, 10, 25, and 50 per cent.

From these estimates, it was intended to derive both price-quantity curves, corresponding to the orthodox demand curve, and income-quantity curves, similar to the type computed by Marschak from budgetary data. This proved possible for twenty cases out of the thirty responding to the questionnaire.[6]

As a by-product of this investigation, intended primarily to seek information concerning demand curves and their elasticity, there has resulted a budgetary study which may be of more general interest to many than the main object of study. In twenty-four cases, the actual present expenditure, based on accounts in eight cases, and on estimates made up from check book stubs, etc., in the others, was given. The proportion of expenditure to income for these cases is listed in the following table:

5. I am greatly indebted to Professor Burbank, the chairman of the department, for his interest in the investigation, which appreciably assisted in its success.

6. Sixty per cent of the questionnaires sent out were answered in full or in part, a high rate of return.

Income	Per Cent of Income Spent for											
	Travel	Clothes	Tobacco	Beverages	Entertainment	Automobile	Books	Music	Domestic Service	Rent	Charity	Savings
$1,000.....	15	8	1	2.5	2	—	3	—	—	15	.5	4
1,850.....	10	7	3	2	7	—	5	1	—	14	.6	22
2,000.....	8	8	.8	.8	10	12.5	5	8	—	10	1	30
2,600.....	2	12	.2	—	2	—	1	1	2	30	1	23
3,000.....	.8	12	3	.7	.5	—	1	—	—	30	—	12
3,400.....	4	5	2	.9	4	4	4	1	.6	9	2	37
4,000.....	12.5	5	.5	.3	2.5	—	1	—	—	25	5	25
4,030.....	2	6	1	2	2	—	5	.5	—	7	.5	38
4,200.....	2	12	.7	1	2	7	1	—	5	19	.5	10
4,200.....	7	7	2	.6	1	—	2	3	6	18	—	24
4,300.....	1	5	.2	.6	2	—	2	3	—	25	.6	14
4,500.....	3	11	.4	1	2	—	4	—	7	20	2	9
5,734.....	1	7	.4	.1	2	3	2	—	17	13	4	—
6,000.....	.8	5	—	.2	.8	—	.2	.2	.8	12	.8	2.5
6,000.....	12	13	.4	2	2.5	8	2	.4	10	22.5	.8	8
6,700.....	10	7	.4	3	2	4	2	.7	8	22	.4	10
7,000.....	4	12	.2	.3	1.5	7	1.5	.7	10	26	.8	5
8,600.....	7	12	.7	4	3.5	10	1	3	7	10	—	3.5
9,600.....	4	5	—	—	3	7	4	.8	—	8	6	46
10,000.....	7	4	.5	2	.8	5	1	3.5	1	15	1	40
13,500.....	4	4	—	.7	.7	7	11	.7	7	11	9	18
18,000.....	3	3	.3	.6	2	3	.6	—	8	2	2	28
22,000.....	3	8	.7	—	1	2	.5	.9	5	16	2	—
62,152.....	3	4	.1	.3	.3	5	1	.2	5	9	1.5	.9

The sample of twenty-four cases is obviously too small to justify any conclusions as to the behavior of the group. The per cent of income spent on the different commodities is extremely diverse and apparently has no relation to the size of the total income or to the age of the man of the family. A larger group would undoubtedly show such relationships. The per cent of income spent, however, does vary with the *size of the family*. The table below indicates that the median expenditure for travel, tobacco, beverages, entertainment, books, musical instruments, and savings — the luxury items of the budget — decreased as the size of the family increased; and that the inverse was true for clothes and rent. The proportionate expenditure of the single men is greatest on the whole, except for clothes, rent, domestic service, and charity. Despite the fact that this sample can be looked upon merely as a collection of interesting individual cases, it is of some interest to compare the proportionate expenditures in each instance with cases cited in other budgetary surveys of faculty groups.[7]

Twenty of the above twenty-four cases could be used for the analysis of estimated expenditures under the assumed price and income changes. In each instance the family concerned stated how much it would spend, on the basis of its present income and standard of living. The estimated expenditure for each item, corresponding to the assumed incomes, were plotted on a double logarithmic scale, and curves were fitted by inspection to these data.

The price-quantity curves are derived by a simple arithmetic process from the data upon the expenditure given for each assumed price change in the questionnaire. Each point on the scatter diagram represents the present increase or decrease in quantity demanded corresponding to an assumed per cent decrease or increase in price.[8] The scatter of these

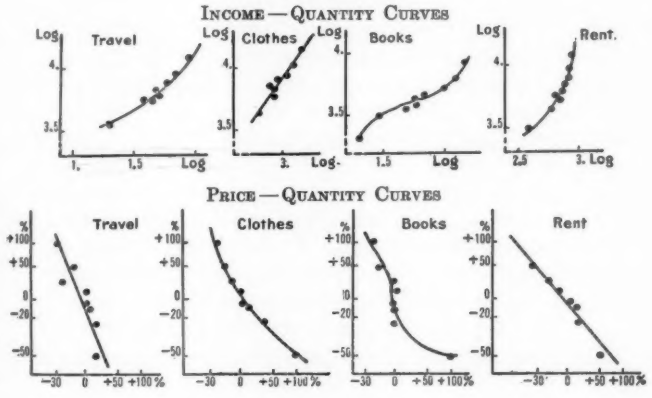
7. For instance "Incomes and Living Costs of a University Faculty," Yale University Press, 1928, and "Getting and Spending at the Professional Standard of Living," by J. B. Peixotto, N. Y., 1927, which are studies of the Yale and University of California faculties respectively.

8. The formula for deriving the change in quantity demanded from

Size of Family	Median Per Cent of Income Spent on											
	Travel	Clothes	Tobacco	Beverages	Entertainment	Automobile	Books	Music	Domestic Service	Rent	Charity	Savings
1	8	6	1	1.5	3	7	4	1	—	10	1	30
2	7	7	.4	2	2	5	2	2	7	16	1	16
3	2	11	.3	.6	2	—	1	.6	2	20	1	9.5
4	2	12	.4	.3	1.5	6	1	.5	7.5	19	1	10

points, on a double logarithmic scale, indicates the demand curve and its elasticity, on the basis of the following reasoning. The quantity consumed changes inversely with price changes (allowing for differences in per cent increases and decreases) if expenditure remains the same. In this case the elasticity of demand is unity, and the demand curve a straight line on a double logarithmic scale at an angle of forty-five degrees with the horizontal axis. In so far as expenditure changes with prices, the actual quantity consumed changes to a greater or less extent than this expected change, which would occur if expenditure had remained constant. This actual change depends upon the difference between the change in expenditure, and the expected quantity change, which, in turn, is determined by the elasticity of demand for the commodity.

CHART I



the data on per cent price and expenditure changes, is as follows: $\Delta = \frac{1+z}{1+y} - 1$ where Δ is the per cent change in quantity, y the per cent change in price, and z the per cent change in expenditure. This allows for the fact that a per cent increase is not the same as a per cent decrease, for example, a 100 per cent increase in price is only a 50 per cent decrease in quantity. This formula was derived by Prof. Glennon Gilboy of Massachusetts Institute of Technology.

Chart I exhibits sample curves of both kinds — income-quantity and price-quantity. In both cases a double logarithmic scale is used and the lines were fitted by inspection and not by any mathematical process. The sample curves of Chart I show that the scatter of points definitely tends to fall along a curve. These sample curves were chosen at random and are typical of the entire group, too numerous to be shown here. The presumption is that the demand and income schedules represented by these points are continuous. The results of this investigation, therefore, would appear to indicate that economists are not far wrong in assuming the existence of a continuous demand schedule.

It was previously mentioned that the assumption is frequently made that demand curves are straight lines on a double logarithmic scale, or that elasticity is constant along the curve.[9] The curves derived in the present investigation shed interesting light upon this hypothesis. In the first place, it is to be noted that considerable inelasticity was found to exist for small price and income changes. Many curves of both sorts, therefore, were not straight lines, but had flex points, indicating inelasticity for one part of the curve and greater elasticity for other sections. In fact, all the commodities but one had one or more curves with a flex point for the income curves; and all but five for the price curves. On the whole, however, the price-quantity curves *were* predominantly straight lines, but the income curves were predominantly curvilinear. As might be expected, the sample is too small to be conclusive on the point.

In a recent study of demand, Marschak has advanced the theory that curves derived from data upon income and expenditure may be considered as mirror-images of the usual price-quantity curves, when the commodity in question forms a small part of the budget.[1] Altho it is possible the-

9. See Ricci, "Das Gesetz der Nachfrage . . .," in the Zeitschrift für Nationalökonomie for January 1931, in which he attacks this assumption as unwarranted (pp. 316, 317).

1. Marschak, *op. cit.* Otherwise the marginal utility of money does not remain constant, which is essential if the quantity change corresponding to a change in the price of *one* commodity is to be the same

oretically to conceive of an income change as an inverse price change, the writer believes that they are psychologically very different and that people might be expected to behave in quite opposite ways in response to a ten per cent increase in income as against a ten per cent decrease in prices. A comparison of the income-quantity curves and the price-quantity curves estimated by the same individuals in this investigation revealed little similarity between the two sorts of curves. It is of some interest, however, that in the few cases in which the curves were comparable, sixty per cent were for commodities amounting to five per cent or less of the total income.

In connection with this question of the similarity between the two types of curves, it may be observed that the income-quantity curves proved much more elastic than the price-quantity curves. Eleven of the twenty questionnaires indicated an elastic demand for two or more commodities for income changes; two showed a corresponding elasticity for price changes. The greatest elasticity of expenditure according to income occurred among the younger men, under forty years of age, with incomes of $6,000 or less, and with families of three or four, that is, with one or two children.

On the whole, however, inelasticity is characteristic of the response of the individuals of this group both to price and income changes. Even in the latter case, no one commodity was elastic for more than forty-five per cent of the group. The most elastic commodities are what might be expected — luxury commodities for a faculty group, if the investigations of Yale and California may be considered typical. The elastic commodities are, in order, travel, entertainment, automobiles, books, and domestic service.

In conclusion, it must be emphasized again that the results of this inadequate sample may be considered solely as illustrating the possibilities of a method. It cannot be concluded that faculty expenditure is elastic or inelastic, or that the demand curves are curvilinear or straight line on the basis

as the quantity change corresponding to a change in *all* prices, as Marschak supposes.

of such insufficient data. It can only be said that with a sufficient sample (some three or four hundred cases) important evidence concerning the character of individual and group demand schedules and their elasticity, could be procured. This method offers a new and realistic means of testing the assumptions of economic theorists as to the continuity and shape of demand curves in actuality, and the relation between the changes of demand which take place as a result of variations in prices and incomes. With an adequate number of cases, it would be possible to conclude whether demand curves may reasonably be supposed to be continuous, constant in elasticity, etc. To those who question the validity of the estimates of individuals concerning what they *would* do if prices or incomes changed, it may be replied that such estimates are merely a more generalized version of choices which must be made every day. People are forced to make decisions consciously or unconsciously as to what they will buy and how much — under the constantly changing conditions of prices, and of incomes. It is not impossible to decide at what point and how much the budget would be cut down, should income decrease. In fact, many individuals have had to make such decisions very recently. It is assumed, of course, that those who buy on no rational basis and have no idea how they spend their money would not answer a questionnaire of this sort in any case. Be that as it may, the author is convinced, on the basis of the present sample, that further investigations of this sort would be productive of important results in indicating the nature of demand.

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RECENT TEXTBOOKS ON ECONOMICS AND THEIR TREND

To anyone who reads the scores of textbooks in economics that have come out in the past ten years, a number of questions will naturally present themselves. What outstanding books are there in the list; what particular tendencies do they show, along pedagogical lines or in economic thinking; do they seem designed to stimulate intelligent thinking on the part of the students or on the part of the general public?[1]

1. The list, arranged in chronological order, is as follows:
Magee, J. D., Introduction to Economic Problems, Scribners, 1922.
Le Rossignol, J. E., Economics for Everyman, Henry Holt, 1923.
Williams, T. R., Introduction to Economics, Heath, 1923.
Williams, T. R., Readings in Economics, Heath, 1923.
Faubel, A. L., Principles of Economics, Harcourt Brace, 1923.
Hunter, M. H., and Watkins, G. S., Background of Economics, McGraw-Hill, 1923.
Seager, H. R., Principles of Economics, Holt, Third Edition, 1923.
Bye, Raymond T., Principles of Economics, Knopf, 1924.
Vanderblue, H. B., Problems in Business Economics, A. W. Shaw, 1924.
Hamilton, Walton H., Current Economic Problems, Univ. of Chicago Press, 1915, 1919, 1925.
Boucke, O. F., Principles of Economics, Macmillan, 1925, Two volumes.
Brown, H. G., Economic Science and the Common Welfare, Missouri Book Co., Columbia, Mo., 1925.
Le Rossignol, J. E., First Economics, A. W. Shaw, 1926.
Edie, Lionel D., Economics: Principles and Problems, Crowell, 1926.
Black, John D., Introduction to Production Economics, Henry Holt, 1926.
Patterson, S. H., and Scholz, K. W. H., Economic Problems of Modern Life, McGraw-Hill, 1927.
Hewitt, W. W., Rudiments of Economics, Crowell, 1927.
Rufener, L. A., Principles of Economics, Houghton Mifflin, 1927.
Weld, W. E., and Tostlebe, A. S., A Case Book for Economics, Ginn, 1927.
Bogart, E. L., and Landon, C. E., Modern Industry, Longmans Green, 1927.
Thorp, Willard L., Economic Institutions, Macmillan, 1928.
Keezer, D. M., Cutler, A. T., and Garfield, F. R., Problem Economics, Harper & Bros., 1928.
Thompson, C. M., Principles and Practices of Economics, Benj. Sanborn, 1928.
Bye, R. T., and Hewitt, W. H., Applied Economics Knopf, 1928.

Most of the numerous texts are constructed on the traditional pattern, with the customary chapters on production, consumption, business organization, monopoly, transportation, labor problems, value, money and banking, international trade, wages, interest, rent and profits, often with concluding sections dealing with public finance and socialism. A casual turning over of pages might leave the impression that no significant development in economics is shown in all these thousands of pages; and it is true enough that few of them make any considerable original contribution, as most of the writers modestly admit. Yet there are more original ideas, and more original ways of putting old ideas than is evident to the casual reader. The thought and exposition in many of the recent texts is excellent, and marks a vast improvement

Garver, F. B., and Hansen, A. H., Principles of Economics, Ginn, 1928.
Hayes, H. G., Our Economic System, Holt, 1928, Two volumes.
Black, J. D., and Black, A. G., Production Organization, Henry Holt, 1929.
Rutledge, R. M., Everyday Economics, Houghton Mifflin, 1929.
Deibler, F. S., Principles of Economics, McGraw-Hill, 1929.
Knight, B. W., and Smith, N. L., Economics, Ronald, 1929, Two volumes.
Shearman, H. P., Practical Economics, McGraw-Hill, Second Edition, 1929.
Kimball, D. S., Industrial Economics, McGraw-Hill, 1929.
Epstein, R. C., Supplementary Readings in Economics, Scribners, 1929.
Soule, George, The Useful Art of Economics, Macmillan, 1929.
Marshall, L. C., Industrial Society, University of Chicago Press, 1929–30.
Tugwell, R. G., Munro, Thomas, and Stryker, Roy E., American Economic Life, Harcourt Brace, 1925, 1930.
Gemmill, P. F., Fundamentals of Economics, Harper & Bros., 1930.
Fairchild, F. R., Furniss, E. S., and Buck, N. S., Elementary Economics, Macmillan, 1926, 1930, Two volumes.
Knight, B. W., and Smith, N. L., Economics, Ronald, 1930, Two volumes.
Fairchild, F. R., and Compton, R. T., Economic Problems, Macmillan, 1930.
Ely, R. T., Adams, T. S., Lorenz, M. O., and Young, A. A., Outlines of Economics, Macmillan, Fifth edition, 1930.
Atkins, W. E., McConnel, D. W., Edwards, C. D., Rauschenbush, Carl, Friedrich, A. A., and Reed, L. S., Economic Behavior, Houghton Mifflin, 1931, Two volumes.
Schlichter, Sumner H., Modern Economic Society, Henry Holt, 1928, 1931.

over what appeared in most texts of ten years ago. If the quantity is greater and the average quality lower than we might wish, or lower than we even have some right to expect, the explanation is to be found partly in the motive which leads many of us to try to get out a successful text with speed rather than to take the time necessary for thoro work. The complexity of the economic motive is illustrated by the behavior of the economists themselves.

The first thing observable in a survey of these texts is marked heterogeneity: variety in size, in scope and plan, in purpose, theoretical doctrine, in social and philosophical outlook. In size, for instance, there is every gradation from Le Rossignol's "First Economics," with only 181 pages, or Thorp with 300 pages, to the large, two-volume, thousand-page sets of Fairchild-Furniss-Buck, Boucke, Hayes, or Atkins et al. The general drift, as might be expected from the growing body of economic literature, is toward larger books. Many of the single-volume books contain 800 to 900 closely printed pages.

With growing size has gone a tendency for collaboration in the writing of texts, and we have Patterson and Scholz; Weld and Tostlebe; Bogart and Landon; Keezer, Cutler and Garfield; Bye and Hewitt; Garver and Hansen; Fairchild, Furniss and Buck; Black and Black; Ely, Adams, Lorenz and Young; and the recent ambitious institutional work of Atkins, McConnell, Edwards, Rauschenbush, Friedrich, and Reed. It seems to be thought by not a few that our science has grown beyond the grasp of any one man, or at any rate that the task of writing a textbook is more than some economists care to undertake. To the present writer it always seems that a subject so broad and complex that no one professional economist can understand it thoroly and write about it intelligibly ought not to be offered to a freshman or sophomore in a five-hour course. Some of these joint-author works suffer from inconsistencies and from general lack of systematic organization; and of course no such work can present a well-ordered personal philosophy such as would be

found in Taussig or Marshall. Yet the trend seems to be toward books of joint authorship.

In scope, as well as in size, there is a wide variation, from texts that deal almost exclusively with "principles" as, for instance, Le Rossignol, Thompson, Bye, Rufener, Garver and Hansen, Black and Black, and Gemmill, to texts with a relatively great amount of illustrative material, such as Fairchild, Furniss and Buck, or Tugwell, Munro and Stryker, or Atkins et al.

In several of the outstanding works a great deal of attention is given to the central problem of value. Fairchild, Furniss and Buck devote seven chapters, 160 pages, to the general problem of price determination; Gemmill gives five chapters, nearly 100 pages; Hayes eight chapters, 127 pages; Knight and Smith six chapters, 132 pages; Deibler three chapters, nearly 100 pages; Ely four chapters, about 70 pages; Garver and Hansen thirteen chapters, 220 pages; Schlichter five chapters, 112 pages. Garver and Hansen and Rufener approach most problems from the slant of value or price determination. In view of the very heavy emphasis which so many American writers have given the problem of value theory, we might question whether Professor Homan[2] has not exaggerated the extent to which our economists have turned their attention away from systematic theory. On the other hand, however, several texts omit practically all discussion of value: Le Rossignol, Patterson and Scholz,Atkins et al.; while Thompson treats value very briefly.

Some years ago Professors Watkins and Hunter published their Background of Economics, designed to serve as a background or introduction to the study of principles of economics, and recently Professors Bogart and Landon have brought out an elementary work on Modern Industry. Bye's Applied Economics was designed to follow the course in principles rather than to precede. That students in economics need background all will surely agree, but that they can get an adequate background out of a brief description of industrial processes is highly improbable. The present writer has

2. Contemporary Economic Thought, p. 451.

always insisted that if background is the great need, it can most logically be secured by moving the course in principles up into the later college years — junior or senior. Where the course is given to upperclassmen, the economics majors can be separated from the non-majors, and an appropriate body of material can be offered to each. The students of economics will then come to the course in principles with a background of a number of courses in the subject; the non-majors will ordinarily have had some work in the social sciences, and of course both classes of students will have somewhat greater maturity. The course in principles probably requires more maturity and judgment and a broader background than any other courses in economics except those in advanced theory and economic reform. The writer is not merely theorizing about this, for he has taught principles of economics to upperclassmen, majors and non-majors, for a number of years, and has found the students generally able to understand the work, and a joy to teach.[3]

Books of readings still issue from the presses in fair volume: Williams, Hamilton (Revised edition, 1925), Keezer, Cutler and Garfield, Rutledge, Epstein, and Fairchild and Compton. In most of them the selections seem too numerous and too brief, calculated to make of the student's mind a sort of intellectual crazy quilt; but a surprising amount and variety of interesting material is thus made accessible. Such books as Weld and Tostlebe and Vanderblue are designed for a somewhat different purpose — that of introducing the case method, so long used in law schools and in the Harvard Business School, into the teaching of economics. It is not yet clear that this method is as well adapted to social economics as to vocational work, such as law and business.

In recent American books the division between classical, Austrian and historical schools, once so important, is very hard to trace. Most of the younger American economists represent a wide variety of influences, and are perhaps more

3. Cf. an article by the author in American Economic Review, Vol. XII, No. 4, Dec. 1922, on the Course in Elementary Economics.

influenced by some of the older American economists than by the great schools that were dominant a generation ago.

In various books may be seen the influence of some of the outstanding American economists of the past generation, particularly J. B. Clark, Taussig, Fetter, Veblen, Davenport, Ely and F. M. Taylor, and among the younger men, Wesley Mitchell. The distinctive flavor of Veblen is far more in evidence in recent textbooks than in those of ten years ago. With the exception of J. B. Clark, perhaps none of the men mentioned has come so near developing a distinctive school, in the sense of a peculiar and distinctive method of approach, as F. M. Taylor, to whom several of these books have been dedicated.

Admitting the difficulty of definite classification, we may perhaps place among the more definitely classical of these books Garver and Hansen (at least so far as this is the work of Garver, who has a mastery of Marshall perhaps unsurpassed in this country), Le Rossignol, Curtis, Gemmill, and, less definitely, Ely, and Fairchild, Furniss and Buck, and perhaps Schlichter; altho Schlichter is extraordinarily cosmopolitan in his outlook.

Not long after the close of the War, Professor Taussig pointed out that the great task ahead in economics was the statistical testing of economic theory, and nearly a decade ago Wesley Mitchell predicted an extension and improvement of statistical compilations until economics should become a "quantitative science."[4] In economic journals and monographic studies of special fields the development of statistical data has been truly impressive; yet textbooks have been but moderately enriched by the growing accumulation of statistical knowledge. This is due to several causes. In the first place, there is the fact that not enough students are able to understand statistical terms to offer a wide market for books that abound in them. Secondly, much of the statistical matter is not sufficiently tested to serve as a reliable basis for theoretical generalizations. Some of the most embarrassing errors made by economists in the post-war

4. The Trend of Economics, edited by R. G. Tugwell, p. 27.

period have been made in the field of statistics — particularly statistical predictions regarding the business cycle, the price level and related problems. Economic opinion on some aspects of the present business situation, notwithstanding all the statistical data available, presents a picture of hopeless confusion.

Finally, the actual statistics available are of course drawn from a dynamic world, and these do not fit into economic theories that are valid only in a static world. Many American economists, for instance, hold to a marginal utility or to a marginal cost theory of value. Even if these theories were valid in logic — which Marshall has taken great pains to disprove — it would be impossible to find statistical data from any market to prove or illustrate them. The statistical data, such as has been worked out by Professor Schulz at Chicago and by a number of agricultural economists, from which we can draw demand and supply curves with some success, are found in a world not at all static. The marginal productivity theory of wages, again, has always seemed to the present writer so fanciful, so far removed from the actual world, as to be of little use in explaining wages in a dynamic society; and no one has ever brought in actual data from the business world to illustrate it.[5] Economists of the marginal school usually build up a hypothetical case of an entrepreneur who subtracts a marginal laborer from his force, or perhaps adds one, and then notes the difference in his output — something no employer of a large force of men could really do.

Here is one of the reasons, the present writer would suggest, why American economic theory has not had more influence in practical affairs. Most of our economists, in discussing the central problem of value, use a language that is alien to business men and to our students as well. The student who learns about marginal costs and marginal demand will probably never see those terms again after he is graduated,

5. An exception, where data are used that derive from statistics if not from the business world, is the paper on the Theory of Production by Cobb and Douglas in Proceedings of the American Economic Association, March, 1928.

and he is most unlikely to remember them long. Would not Marshall's supply and demand analysis have a considerable advantage, being as it is in the language of the outside world, of the market place, of business men everywhere; the language that the student has always heard and always will hear, unless he becomes a teacher of economics?

I venture to add that the confusion to which marginal analysis has led among American economists appears not less among English economists, who have generally studied Marshall more carefully and follow him more closely. If anyone will take the time to make a list of every marginal this, that, and the other thing that has been offered as the determinant of value, he will be surprised that economics has any influence at all. The saving circumstance may well be that the public cannot understand it and so regards it as profound.

In the new two-volume text, "Economic Behavior," by Atkins, Edwards, Friedrich, McConnell, Rauschenbush and Reed, we find an ambitious attempt to build up a system of "institutional" economics — if we may be allowed the courtesy of calling it a "system." The authors of this distinctive treatise start with the ambitious thesis that "the older assumptions and categories must be abandoned almost in toto." As the prospectus states: "Instead of treating the factors of production such as land, labor, capital, and management, they [the authors] describe the business enterprise as a going concern; for the value theory they substitute an account of the conduct of buyers and sellers under varying conditions of the market; they make no attempt to describe economic conduct in terms of hypothetical equilibrium— they give instead a picture of the varying situations through which behavior proceeds; they pay no attention to normal price, marginal buyers and sellers, functional distribution, and hypothetical demand and supply curves." As for man himself in his psychological reactions — and the institutionalists lean heavily upon the shaky reed of modern psychology — he is not the selfish, rational economic man of Ricardo, nor even the man of "flesh and blood" that Marshall describes, but

apparently an almost wholly irrational creature, governed by "habit, custom and tradition." A host of examples from Stuart Chase are used to prove, not that man is sometimes or often irrational, but that he is seldom or never otherwise. This is not far from Veblen's or Mitchell's position.

The authors of Economic Behavior define an institution as any "widespread and complex mode of habitual behavior," and they see the influence of habit "in government, law, ethics, and social groupings and in man's use of the world about him." They consider machine-equipped factory production or investing for profit just as truly an institution as a government, church or bank. The institutional pattern is not hard and fast, but under the pressure of group interests and conflicts, of new conditions, and of new ways of thinking, it is continually changing. Thus institutions are to be understood as "behavior in flux."

Institutionalism has much in common with the historical school. Both historical and institutional schools criticize the inductive and abstract methods of the classical school, and both fail to appraise them fairly; both use historical data freely, altho the historical school is perhaps more inclined to see a logical sequence in historical development; both stress the dynamic as distinguished from the static elements in industrial and commercial organization; both draw upon the data of biology, philosophy and sociology. To some extent the historical school originally owed its development to the growth of biological science, and Wesley Mitchell, probably the outstanding figure in the institutional school, makes much of instincts; but in Economic Behavior instincts get no attention, while recent developments in psychology are emphasized at many points. Unfortunately few, if any, of the institutional school have attained the breadth of historical or philosophical scholarship shown by some of the outstanding figures in the historical school.

A thoro discussion of the new institutionalist text would call for a discussion of the whole movement, which is here out of place; but the book suggests some general comments. The authors lay out an ambitious program — to

scrap practically the whole body of economic theory. We might not be satisfied with Professor Bye's reminder that Mill, Marshall and their fellows were "good observers and keen thinkers," and therefore not likely to have been entirely mistaken, but there is surely significance in Bye's further remark[6] — still valid after the publication of "Economic Behavior" — that the critics have given us nothing better to take the place of traditional economic theory. By the time the last page of this text is reached, the reader feels almost hopelessly "up in the air"; not so much because of the criticisms directed at his cherished assumptions and habits of thought, for criticisms are at least "related to" something that he can understand, as because of the fact that there seems to be so little effort to trace causes or effects or relationships of any kind. Most men of scientific training, in going through factual material, will seek to trace out underlying principles, to formulate tentative general conclusions, to classify and correlate — to build up *theories*. Yet here is to some extent at least, an implicit denial of the validity of any process of the kind. The authors throw into the lap of the reader a great mass of economic, historical, psychological, philosophical, biological, and sociological material — interesting and significant material, much of it, it should be conceded — but they deny the general validity of the process by which economists have tried to find order and logic in it all.

One might properly ask: what reason or excuse can be offered for publishing a collection on institutional economics, to serve as an introductory textbook in place of the "traditional 'Principles'"? The traditional economist has some justification for offering such a text. He thinks there *is* such a thing as a systematic body of theory that can be put in a book and taught to students to their profit. If there is no such thing, the reason for the traditional first course is largely gone, is it not? Such a body of unrelated facts as one finds in Economic Behavior might be picked up by the students in random reading and in courses here and there. The use of

6. The Trend of Economics, p. 272.

Economic Behavior as a "descriptive" course, to precede the usual course — the authors suggest this as one possibility — would seem particularly anachronistic. If the material really throws light on the problems of orthodox economics, it should be put directly into the economics text, where its significance would be most easily seen.

Yet, after all has been said, Economic Behavior should be welcomed. It is critical of some of the assumptions of traditional economics, and there will never be too much criticism of any well established system of thought. Intelligent criticism is always in the end constructive; and the new institutional text will help prepare the way for a more progressive type than we have had in the past. Perhaps it will be through such works as this that economics will be delivered from the "present impasse" that Professor Homan has pictured so clearly; even tho, for the present, Economic Behavior looks like a rather serious impasse in itself.

Institutionalism is not the only sign of a growing progressivism among American economists, of a growing tendency to question the assumptions of the present order, to point out the planlessness, the waste and inefficiency, the poverty and insecurity of so many of the people, the gross injustice with which the rewards of industry are distributed. There has been a general shift in the direction of progressivism — perhaps some would call it radicalism — from the time economics was first taught in the United States. One searches almost in vain for a gleam of progressivism in the American texts written in the last century: Wayland, Bowen, Carey, Horace Greeley, Perry, Bascom, Thompson, Gregory, Meservey, Patten, Newcomb, Laughlin, Patton, Osborne, or Macvane. Several of the texts named were even crudely protectionist, and rankly stand-pat.

Taussig's Principles, first published in 1911, represented a progressivism quite beyond that of any other American text of the time, and in advance of most later texts. Even today, after all the socialistic developments of the post-war period in Europe, after thirteen years of the Russian experiment,

Taussig's chapters on socialism seem surprisingly up-to-date.[7] Some of the recent texts, it is true, go even farther in their progressivism. Perhaps Schlichter, in his Modern Economic Society takes the most advanced stand yet taken by any American economist outside the ranks of professed socialists.

In fact Schlichter might reasonably be classed as a moderate socialist. Among the other definitely progressive texts are those of Edie, Brown, Bye and Hewitt, Tugwell, Munro and Stryker, Atkins et al., Patterson and Scholz, Hayes and Curtis. To the present writer this has seemed a very important matter. The traditional economics generally taught in our universities doubtless often failed to give the students a really liberal and intelligent view on economic questions, except on the tariff, and perhaps some of the simpler labor problems. In *explaining* how the present system — assumed to be competitive — actually works, or is supposed to work, most texts inevitably *justify* the system to some extent, and so reinforce the natural unthinking conservatism of the students. The majority of college students in America are immaculate economic fundamentalists, even after they have taken their course or courses in Economics.

Schlichter's new book merits more than passing attention, for its liberal, progressive attitude, its combination of traditional and institutional, and even socialistic, points of view, for the wide range of sources from which its material is drawn and the care with which it has been sifted. A few words from the preface seem worth quoting: "Such claim as this book makes upon the reader must rest largely upon the fact that it represents an effort to reduce the lag between the specialized and monographic work and the more generalized descriptions of our industrial system. Every economist will appreciate the enormous difficulty, if not the impossibility, of incorporating the work of a wide variety of specialists into a general description of modern industry. But it is not enough to say that the task is impossible. Whether possible or not, it

7. See also the passage (vol. II, p. 207) on "Princelings and ducal personages."

must be attempted, and done as well as can be." There is no doubt it has been done well. Modern Economic Society represents an important landmark in the development of economics. It may prove to be the step that will lead us out of the "impasse" and onto higher ground. Schlichter, moreover, is critical of many orthodox doctrines; in fact, he leans strongly toward institutionalism, and his hesitancy in answering many questions indicates a deep skepticism as to the operation of some of the orthodox laws. He foresees the final disappearance of capitalism, which would presumably mean the disappearance of the economics of capitalism.

Whether economics will long persist in our university curricula or whether it will even continue long to hold a position as a science or quasi-science, is a question we may well face seriously. There are reasons for believing it may now be headed for the academic ash can. The theory and practice of college education are being subjected to a critical scrutiny; and not far ahead are revolutionary changes that may tear our colleges up by the roots, or entirely reshape them. Or perhaps we may some day see — as Dean Langdell of the Harvard Law School did long ago — the fundamental absurdity of teaching with textbooks, and may substitute readings from journals, and in this way or some other, make education a process of growth to continue after college. At all events, between the Scylla of the institutionalists and progressives and the Charybdis of the barbarian hosts of business school promoters, economics is already grinding on the reefs. The progressives deny the validity of economic theories, and the business schools are demanding something more practical. One might well feel discouraged, but for the fact that he must feel the tremendous importance of the job to be done.

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AMERICAN WAGES

Until the last decade many of the generalizations regarding wages and wage levels in the United States were less the result of direct measurement than of broad estimate. Since the war and particularly during the past few years, wage statistics have improved both in frequency of collection and in the range of industry and occupations which they cover. While it is possible to make elaborate analyses of the movement and structure of wages since 1928, it is quite impossible to match these contemporary studies with anything of equal value historically without resorting to considerable interpolation and without stretching inadequate samples beyond their breaking point. For remote historical comparisons of wage movements, then, the student must depend upon a vast amount of heterogeneous material, partly sample and in part total counts, collected independently by a variety of local and federal agencies which, with regard to the basic problems of logical wage collections, rarely saw eye to eye.

The task of bringing order into this chaos of raw data is one involving prodigious labor, uncommon knowledge and sound judgment. Professor Douglas has revealed only part of his contribution when he states that the preparation of his book on wages required "approximately 18,000 work hours" and three million computations. Every student of labor conditions in this country owes an incalculable debt of gratitude to Professor Douglas[1] and to Professor Brissenden[2] for their pioneer investigations into the earnings and standards of living of American labor.

Professor Douglas sets himself the problem of measuring the changing material welfare, or real wages, of twenty-two million workers. In the pursuit of this objective he has not

1. Paul H. Douglas, "Real Wages in the United States, 1890–1926," Houghton Mifflin Co., 1930.

2. Paul F. Brissenden, "Earnings of Factory Workers, 1899–1927," Census Monographs, No. X. Government Printing Office, Washington, 1929.

limited himself to the wages of manufacturing labor, as many of his predecessors have done, but includes in his array of data the wages of workmen in the mining, transportation, public utility, and building industries, the earnings of clerical workers, the salaries of government employees and of ministers, and the wages of farm labor. Only for two classes of labor of considerable size (domestic servants and mercantile employees) was it impossible, he states, "to work out any continuous index." Within this wide and significant area of inquiry, Professor Douglas makes use of almost every available scrap of information. He examines money wages in the form of hourly, daily and full-time weekly earnings and average actual annual earnings; he measures changes in the hours of work; he computes estimates of the average annual volume of unemployment for each year from 1897 to 1926 in manufacturing, transportation, building trades and mining; he constructs a new index number of the cost of living and uses it as the denominator of the fraction which yields the index number of real wages; and finally he endeavors to throw light on the causes of wage changes by comparing movements in wages with variations in the physical and value productivity of labor.

The result is a vast book, obviously not meant for light and hasty reading. Its pages bristle with issues which will furnish problems to economic investigators for many years to come. Being what it is, the study cannot be made the text for simple and final appraisal. Fascinating as the several major conclusions of the book are, its value depends much more on the wealth of detail which fills it. And it is on an examination of the uses of this detail that final judgment as to the validity of the conclusions must rest.

The problems it raises are not different from those encountered in any statistical inquiry whose findings are based upon only partial data. Where statistical conclusions rest upon sample series, involve interpolations and extrapolations for missing periods of time, and the combination of many categories into one, the task of the investigator is to judge the adequacy of his sample, to test the accuracy of his chosen

units of measurement, and to determine the validity of the weights he employs. For the application of such tests, statistical method affords no automatic rule-of-thumb. Final judgment must come from observing how the various series act; what they show when compared with other series, independently collected but apparently equally accurate; and what the unit of measurement does, for example, during crucial periods like those of industrial depression.

In a limited space it is plainly impossible to make the detailed examination of the thousands of measurements required by a really scientific examination of this volume. The present discussion, therefore, is limited to several examples of the type of problem of wage measurement which this study by Professor Douglas discloses.

One of the most widely used wage series is the measurement of full-time weekly earnings, which serves the double purpose of showing the potential earning capacity of labor when it is employed and of furnishing the means of checking or correcting independent measurements of actual earnings. Because of the interest attached to such figures, Professor Douglas has gone to great lengths to construct series of full-time weekly earnings in a number of industries. The series for manufacturing industries represents an aggregate of several basic series. It is first a combination of full-time weekly earnings in two groups of industries, union and "payroll." The basic data in the first group are union hourly rates of wages and in the second, hourly earnings computed from payrolls. In each case the full-time weekly earnings are derived by multiplying the chosen hourly wages by the full-time hours per week. Simple as this process may seem, it involves a variety of most important assumptions and judgments. The effects of the decisions made by Professor Douglas can best be studied by comparing his series with another constructed in a different way. Instead of multiplying hourly earnings, union and payroll, by estimates of the length of the normal work-week, the new series represents a weighted average of the highest week's wages in the year for the manufacturing industries which report payrolls and employment

monthly to the United States Bureau of Labor Statistics. In this method, it is assumed that the highest weekly wages in the year are the best measure of prevailing full-time weekly earnings. The comparisons of the two series are shown in the following tabulation.

PER CENT CHANGES
IN MANUFACTURING FULL-TIME WEEKLY EARNINGS

Period	Douglas Series	Week of highest earnings
1917 to 1920.....	+64	+31
1920 to 1921.....	− 9	−15
1920 to 1922.....	−13	−23

These unquestionably are striking differences. There is no proof, of course, that one method is better or more accurate than the other; but when two series designed to measure the same phenomenon diverge so sharply, the whole problem of measurement obviously merits reëxamination.

Aside from the variety of issues involved in the choice of either series as the most satisfactory index of full-time earnings, the Douglas method is open to question at several points. The final figure for manufacturing is, as was pointed out, an average of the data for union and payroll manufacturing industries. In the construction of the final average, the union wages are weighted 30 per cent of the total. While union membership has fluctuated considerably between 1890 to 1926, it is doubtful whether its total relative strength even in the peak year 1920 could be rated as high as 30 per cent of the total numbers employed in manufacturing. If, further, union strength be limited to membership in the industries listed by Douglas, namely foundries and machine shops, marble and stone work, baking, printing, and mill work, 10 per cent would be a most liberal allowance in fixing the weight for union wages.

Union wage rates, moreover, have defects peculiar to themselves. They rarely reflect actual changes in the rate of wages and, particularly during periods of depression, they can be regarded as no more than nominal rates which conceal

the true movement of wages. This is indubitably the case with reported union rates of wages during the present depression in the building and other unionized industries, with the possible exception of the printing industry. That the same policy of reporting nominal data has been observed in earlier depressions is, I think, beyond question. Not only do union rates fail to reflect changes in wage rates in the occupations over which the unions claim jurisdiction, but they depart widely from showing the true levels of wages in industries which are part union and part non-union. Since most American industries are now of this character, and many of them have been only partially unionized during the whole of the period of this study, the representativeness of union rates as an index of wages for a whole industry deserves most careful consideration. How great the disparity may be between the union rates and the actual average rates paid in such industries can be seen from the following comparisons between union rates and hourly earnings in the book and job and newspaper printing industries and planing mills. It should be noted in this table that the two series differ not only in the levels of wages they show in specified years but also in the rate, and at times in the direction, of changes in wages.

UNION HOURLY RATES AND ACTUAL HOURLY EARNINGS

Year	Book and Job Printing		Newspaper Printing		Planing Mills	
	Union Rates Douglas	Hourly Earnings(a)	Union Rates Douglas	Hourly Earnings(a)	Union Rates Douglas	Hourly Earnings(a)
1914....	$.45	$.30	$.61	$.38	$.40	$.22
1920....	.83	.64	.96	.68	.88	.56
1922....	.93	.63	1.03	.69	.88	.45
1924....	1.01	.68	1.12	.82	1.03	.48
1926....	1.04	.68	1.15	.86	1.03	.53

(a) Figures collected and published in their wage reports by the National Industrial Conference Board.

Another source of difference between the two methods of measuring full-time weekly earnings is to be found in the nature of the sample covered in the second category of payroll industries. The Douglas list includes eight industries, the

other twelve. With regard to the industries they cover, the lists overlap; the Douglas list omits the automobile, car building, cigar and cigarette, leather, paper and pulp, and silk and woolen industries, whereas the second list omits the slaughter and sawmill industries included by Douglas. Which, therefore, is the better sample no one can say. But it may be pointed out that comparisons made between full-time earnings derived from the list of twelve industries and new estimates of full-time earnings based on a list of forty-two industries, which became available in 1923, show considerable agreement.

The size and character of the samples included in the pay-roll industries may explain part of the divergence in these two measures of full-time weekly earnings. But the largest factor is no doubt the exaggerated weight attached to union rates of wages, which has the effect of concealing the actual magnitude of decline in the years of depression and, in the long run, of sustaining reported average wages above their true levels.

Another illustration of similar problems is raised by various tables showing the wages of coal miners. One table (p. 143) contains the average daily earnings of bituminous coal miners for each year from 1890 to 1926. According to this table, the daily rate of miners was $6.30 in 1920, $6.80 in 1921 and $6.72 in 1922. Apparently the soft coal miners suffered no reduction in their daily rate of wages as a result of the depression of 1921. In fact, Professor Douglas states that "the depression affected the miners . . . not in the form of a reduction of wage rates, but rather in a reduction in the number of days worked. . . ." The record, however, does not confirm this conclusion. The bituminous coal industry is, like other American industries, partly non-union. During 1921, union rates were maintained but non-union rates were sharply cut. In West Virginia and Kentucky, both large producing areas, pick-mining and machine-cutting rates were reduced and the rates of inside and outside day labor were substantially lower in 1921 than in 1920.[3]

3. See Recent Economic Changes, Vol. II, pp. 440–441. See also

On this matter the United States Coal Commission states that "while the rates of the union fields remained stationary from the second half of 1920 to the present (1923), the numerous changes in rates in the non-union field, both in the year 1921 and in the first half of 1922, are with few exceptions decreases in rates. . . . In non-union Pennsylvania, Colorado, and Kentucky there was a general reduction in wages during the second half of that year (1921). A considerable number of mines in West Virginia made further reductions in the first half of 1922. . . . In the second half of 1922 the high prices of coal and the demand for miners which followed the strike of that year resulted in a general increase in wages throughout the entire non-union area. In many cases the increases given entirely offset the decreases of both 1921 and the first half of 1922. . . ."[4]

If these observations are correct, then a true index of the daily wages of soft coal miners should have shown an appreciable drop in 1921 and, perhaps, a rise in 1922. The figures of Douglas, on the contrary, increase in 1921 and decline in 1922. In the construction of figures of actual annual earnings of bituminous miners (p. 350), where Professor Douglas employs interpolations designed to span periods of from seven to thirteen years, the use of data of apparently equal accuracy produces indexes that in some periods vary widely from those of Douglas. I may note that such problems in the measurement of coal wages, and many more like them, will be greatly illumined in the study of coal wages soon to be published by the Industrial Research Department of the University of Pennsylvania.

The illustrations here considered have been chosen at random. They show that, through no fault of a particular investigator, a great deal still needs to be done with the basic materials before our available wage statistics lend themselves to definitive summary. In this field of economic statistics,

Horace B. Drury, "Wages in the Coal Industry as compared with Wages in Other Industries," Annals of the American Academy of Political and Social Science, January 1924, pp. 325, 326.

4. Report of the United States Coal Commission, Part III, pp. 1098, 1099.

as in many others, more is lost than gained in understanding the total phenomenon by resort to general averages, when the essential problems of both wages and of statistical method are imbedded in the detailed data out of which the average is made.

These comments apply almost with equal force not only to statistics of wages, but also to the estimates of unemployment, which Professor Douglas uses to derive the actual annual earnings of all persons attached to industry, and to the index numbers of the cost of living, which represent the factor of correction in computing the changing purchasing power of wages. The construction of a continuous index number of the cost of living involves assumptions and arbitrary decisions which have already been fully discussed elsewhere.[5] More important than the technical issues concerned with the construction of the index number is the validity of a method which leads to the conclusion that real full-time weekly earnings in union manufacturing and building industries were in the years from 1916 to 1920 from 3 to 19 per cent below the average real full-time earnings prevailing in these same industries in the period 1890–1899;[6] and that real full-time weekly earnings in all manufacturing industries were in nearly each of the years from 1910 to 1920 less than the real earnings in each of the years of the decade, 1890–1899.[7]

The unemployment estimates are important not only in themselves but because of the uses to which they are put. Applied to the figures of the actual annual earnings of employed persons, the unemployment rates reveal the actual earnings of all persons attached to industry. By comparing, further, the rates of unemployment prevailing in the earliest and latest periods of this study, Professor Douglas feels justified in adding an increment to the real earnings of American labor in these latest years, arising out of a supposed decline

5. The American Economic Review, December, 1930, p. 747; the Journal of the American Statistical Association, December, 1930, p. 479.
6. Douglas, p. 465.
7. Douglas, p. 130.

in the unemployment rate in this country. It is doubtful whether estimates of unemployment can properly be used for either purpose. As unemployment is now estimated in this country, the estimate represents in substance a comparison between the average numbers of persons employed and the numbers attached to industry or seeking a livelihood in industry. Of the two measures, the first, inadequate as it is, is by all odds the more precise. Both series, moreover, are collected under entirely different methods of enumeration. Without much greater knowledge than we now have regarding the relationship between the two, their combination cannot possibly yield a third index which lays any tenable claims to precision.

With reference to the main purpose of Professor Douglas' inquiry — the discovery of trends in the standard of living of American labor — one final observation may be particularly pertinent at this time. In essence, the comparisons which Professor Douglas makes reveal the contrasts between real wages and standards of living in the decade of the nineties and in the seven years from 1920 to 1926. When Professor Douglas wrote and published his book the events of this post-war period were still regarded as the normal and expected development of long-time economic trends reinforced by the influences of the war. The depression of 1930 has already done violence to this notion by producing a drastic readjustment in the internal wage structure of this country, in the rate of unemployment, in the cost of living, and probably in the prevailing general levels of money and real wages. Reconciling the conclusions of 1926 with the state of affairs five years hence will be the outstanding problem, not only of wage measurement, but of economic theory.

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SURÁNYI-UNGER'S ECONOMICS IN THE TWENTIETH CENTURY[1]

Whether this book was as worthy of translation into English as many of the other recent, untranslated works of foreign scholars seems to me very doubtful. Professor Seligman's foreword justly points out the author's very wide erudition; the interesting rarity, for American readers, of his "philosophical" approach to economic theory; and his relative freedom, as a Hungarian, from any special partiality toward either the German, the English, the French, the Italian, or the American tendencies of thought, which he discusses. But altho it has these merits, and is not without value, the book is marred, I think, by very serious, tho not uncommon, defects.

Like too many histories of theory, it attempts to deal with so many writers, systems, topics, that very little of real significance can be said about any one of them. The result is a mere catalogue of names and labels, plus a multitude of undeveloped and hence largely meaningless generalizations. This fault is aggravated by a second one, resulting from the author's adoption of the view, expressed in his preface, that an historian of theory should use, not the "critical," but the "genetic" method; i.e., that he should aim not at critical analysis of the theories dealt with (for this would reveal his own "bias," or in other words force him to have ideas and take a stand) but only at impartial explanation of the ways in which theories of all sorts have developed. In the introduction, which follows the preface, we are told further that there is no steady progress of an economic science, but only "a rolling sea of contradictory theories." Every system has its merits, must be understood in its own terms, and the like. In short, the author's charity for all is so broad, and his own

1. Original German ed., Theo. Surányi-Unger Die Entwicklung der theoretischen Volkswirtschaftslehre im ersten Viertel des 20. Jahrhunderts. Jena, Gustav Fisher. Trans. by Noel D. Moulton, edited by Professor Seligman, under title given above. New York: W. W. Norton.

thinking is so indeterminate and superficial, that charlatans like Spann (whose book is no better specimen of the work of the Germans), incompetent and muddled people like the worst of our "institutionalists," and a host of utterly insignificant writers, are put upon the same plane with Pigou, Schumpeter, Wesley Mitchell, and the other great leaders in our science. Thus we have not only a crowded and disordered catalogue of names and labels, but one compiled without intelligent discrimination.

It is, moreover, to be feared that as a sample of what may happen when an economist delves into philosophy and returns to economics, the book will deepen rather than dispel any prejudice the reader may have against this procedure. There is, I think, a crying need for men who are at once real philosophers and real economists; but on the evidence of the present work I cannot regard Professor Surányi-Unger as a man of this type. He makes use of an erudition in philosophy which seems nearly as wide as his very remarkable erudition in economic literature, only to throw out undeveloped, unproved, and in many cases far-fetched and doubtful suggestions, about connections between given economic theories, "schools," and "systems" on the one hand, and the general ideas of given philosophers, on the other hand. Thus the whole idea of economic "equilibrium" is traced — without any real attempt at proof — to Herbert Spencer![2] Of serious thinking in philosophy, as opposed to the facile bandying about of philosophic jargon and of allusions to philosophical doctrines, there is no evidence.

Limitations of space forbid any discussion here of the author's interpretations or accounts of familiar economic doctrines. I may say that I find them, not only so much condensed or so little developed, because of the crowding of the book with too much matter, as to be of little value, but also often erroneous. This general judgment should be supported with illustrations, but there is no room here for the amount of discussion which even a few illustrations would require.

2. Pp. 22–26.

In spite of all its defects, the book is useful for those who want a very inclusive reference-list of contributors and contributions to economic theory in the present century. But even here, one is forced to add that for this purpose the volume as printed in English is very badly arranged. The very copious and useful footnotes, which in the German edition were attached to the text, are all transferred in this English version to the end of the book. There they are arranged in an inconvenient and confusing way. The book as a whole is divided into "parts," Part I, Part II, and so on, and in each part the numbering of chapters begins de novo. When one looks up a reference note in the back of this English edition, he finds, on a given page of the notes, possibly the chapter number, and in any event that only which gives no guide to or from the text. The numbers of Parts, in the notes, are given only once. Turning from a note number (say 137) in the text in order to find the book or article specified — almost the only thing for which the book may be useful — one finds pages on pages of jumbled numbers and references, and is confronted with an irritating and time-wasting task of identification. It does not seem too harsh to describe this as inexcusably bad editing.

In a word, then, we have here a work representing enormous industry and erudition, but not much else; useful as a reference work, tho this utility is reduced in the English edition to almost negligible proportions by the arrangement of the notes. Certainly it is not one of the best of recent foreign contributions to economic literature.

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A CORRECTION[1]

I have to call attention to a misprint in my notice on international trade as it appears in the last issue of the JOURNAL (November, 1931, at p. 188, lines 15–16). The passage in which the error occurs reads thus: "Therefore in this case all American prices will remain unchanged." It should read: "Therefore in this case all American prices will sink, *while English prices will remain* unchanged." The words in italics were omitted. Without them the sense clearly is quite distorted. I beg the interested readers to take note of the proper statement.

ACHILLE LORIA.

TURIN, ITALY.

1. The error here corrected is entirely ascribable to the editors of the JOURNAL. Professor Loria had no opportunity to correct the proof of his note.

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